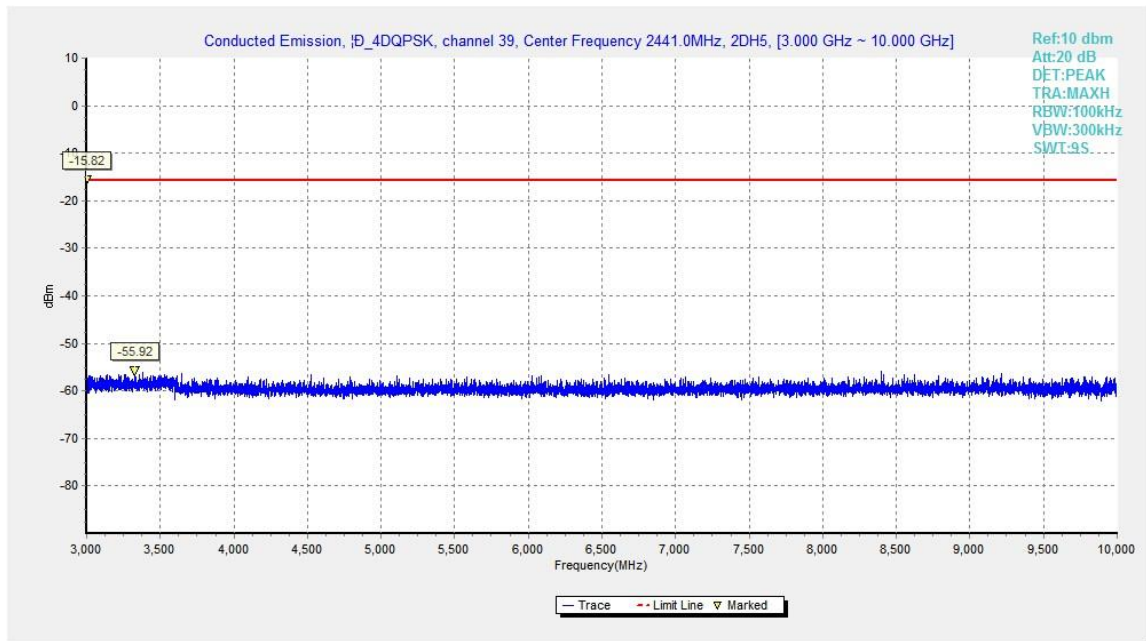
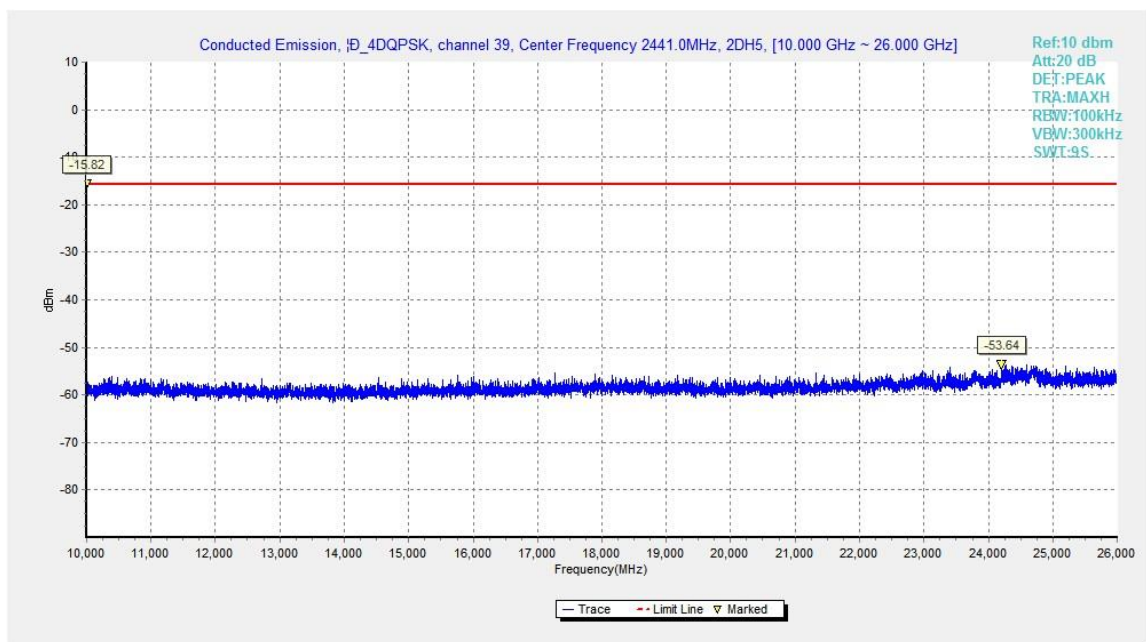
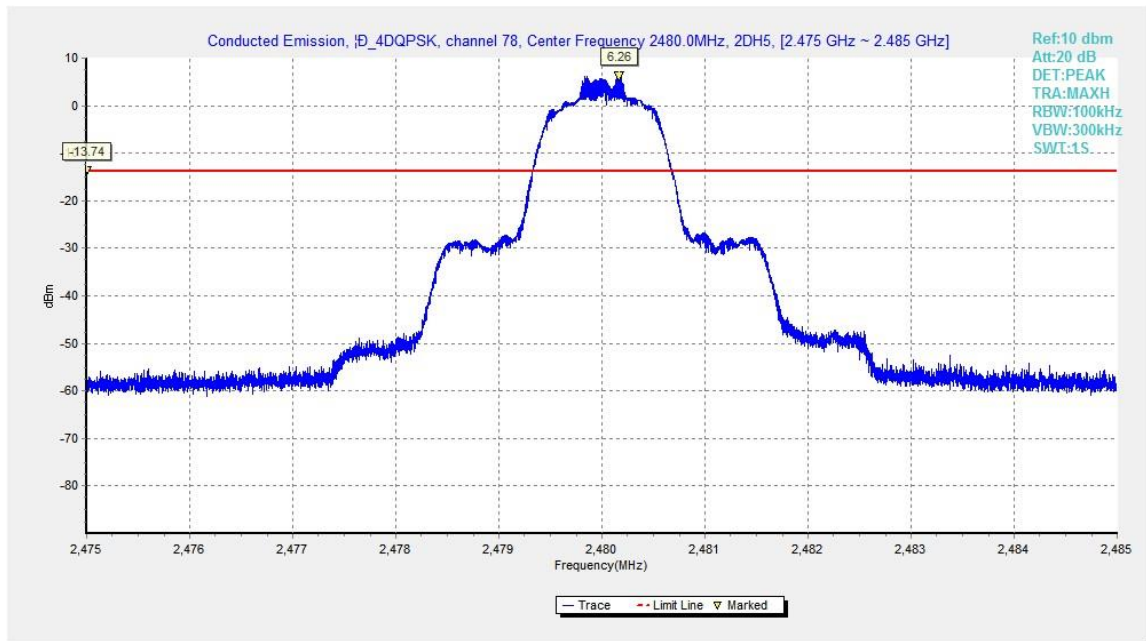




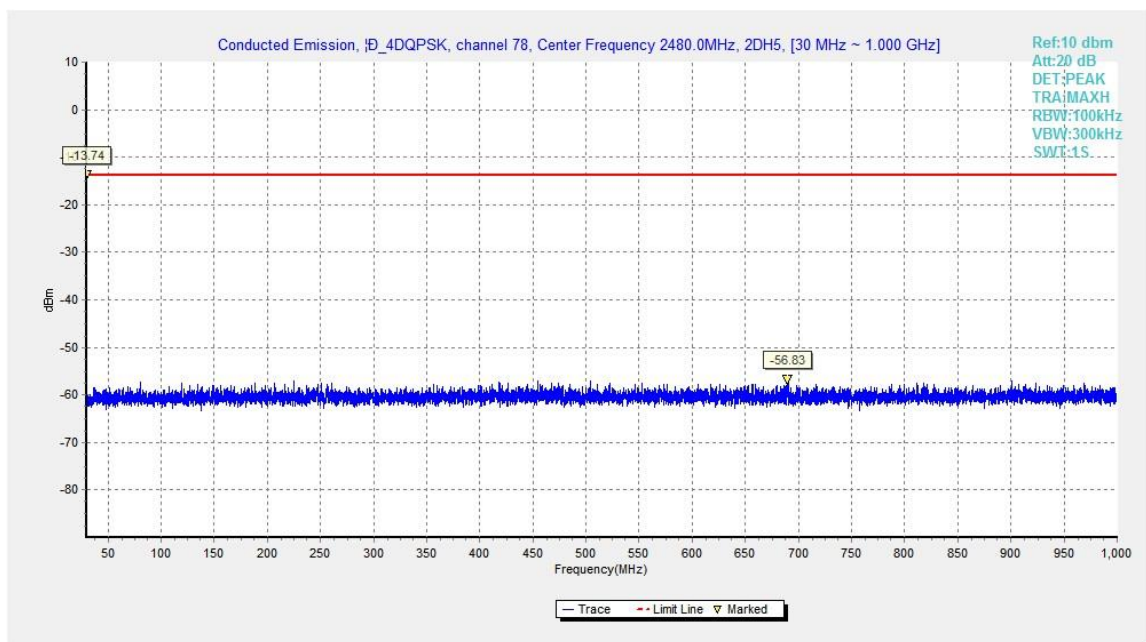
**Fig.42. Conducted spurious emission:  $\pi/4$  DQPSK, Channel 39, 3GHz - 10GHz**



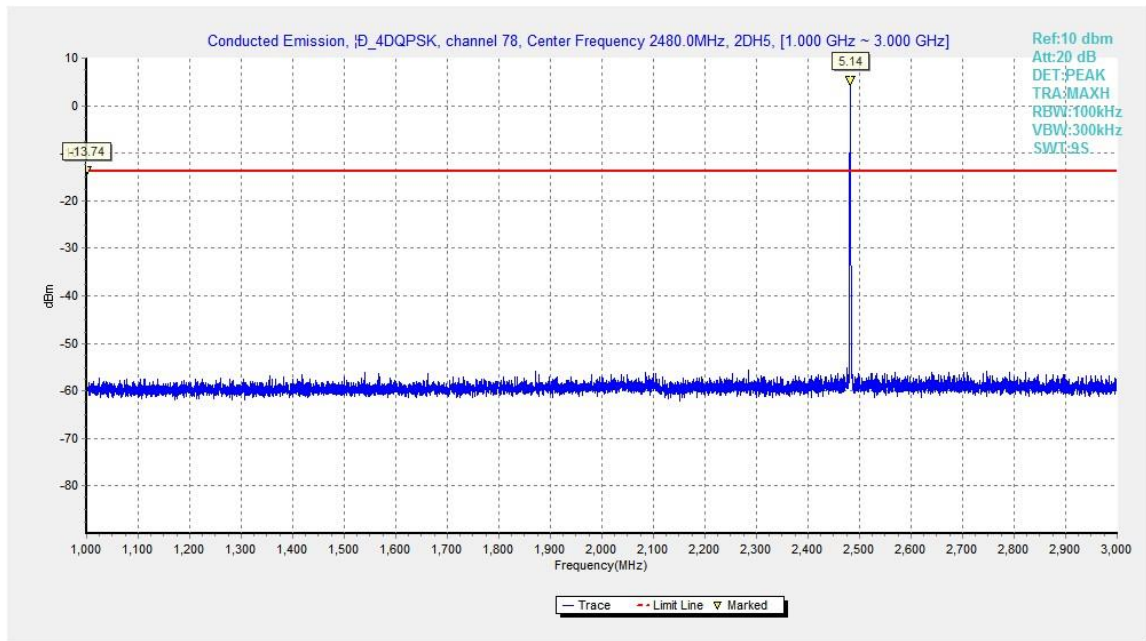
**Fig.43. Conducted spurious emission:  $\pi/4$  DQPSK, Channel 39, 10GHz – 26GHz**



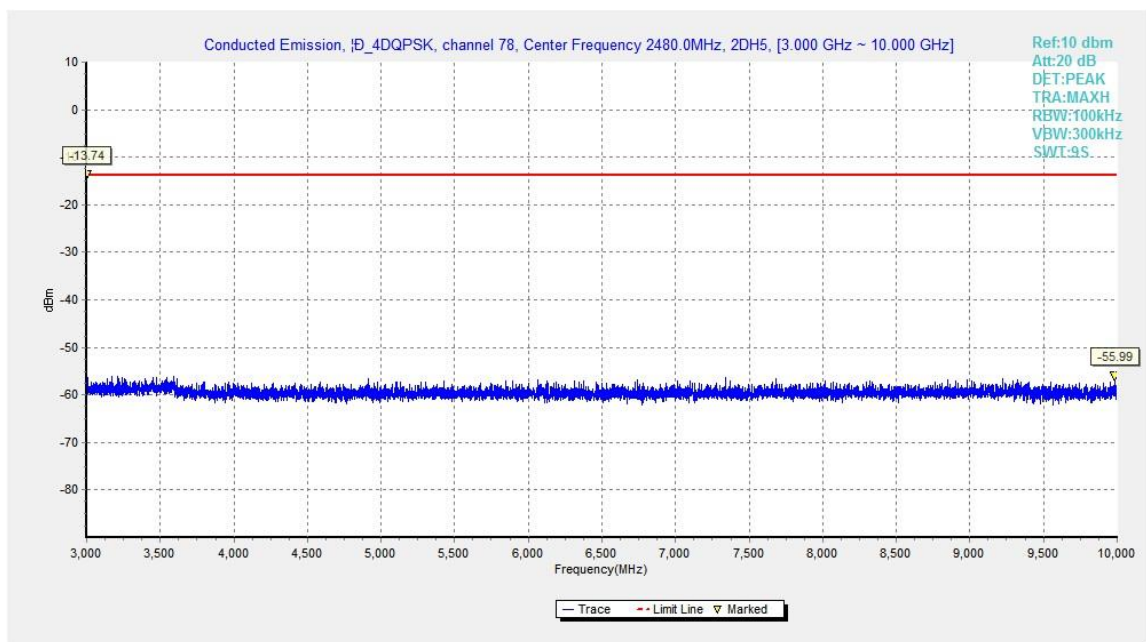
**Fig.44. Conducted spurious emission:  $\pi/4$  DQPSK, Channel 78, 2480MHz**



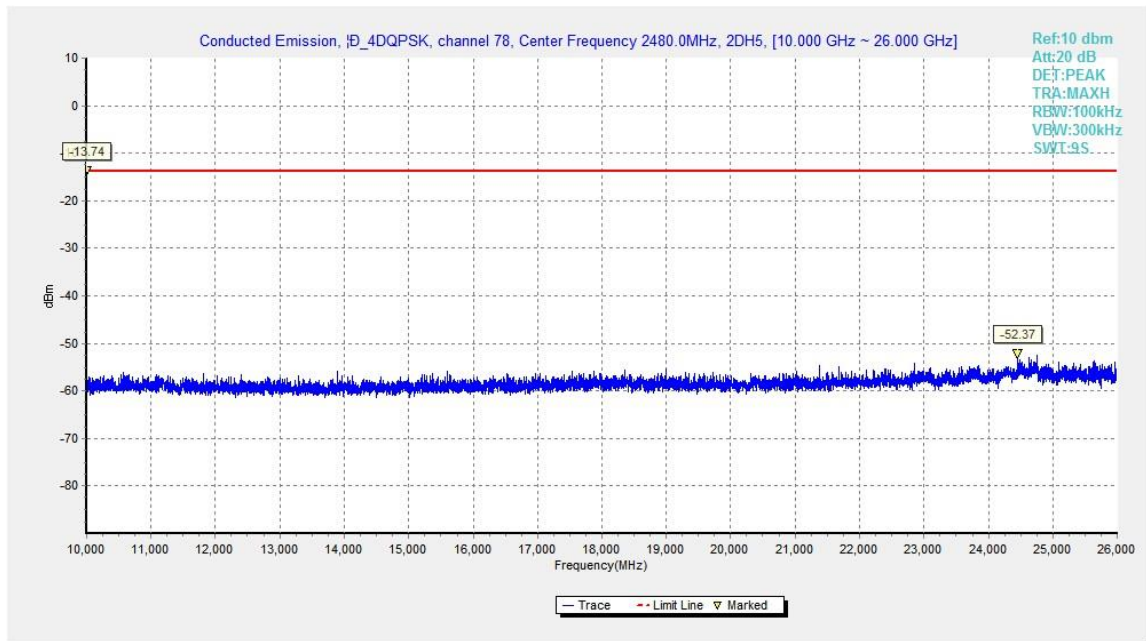
**Fig.45. Conducted spurious emission:  $\pi/4$  DQPSK, Channel 78, 30MHz - 1GHz**



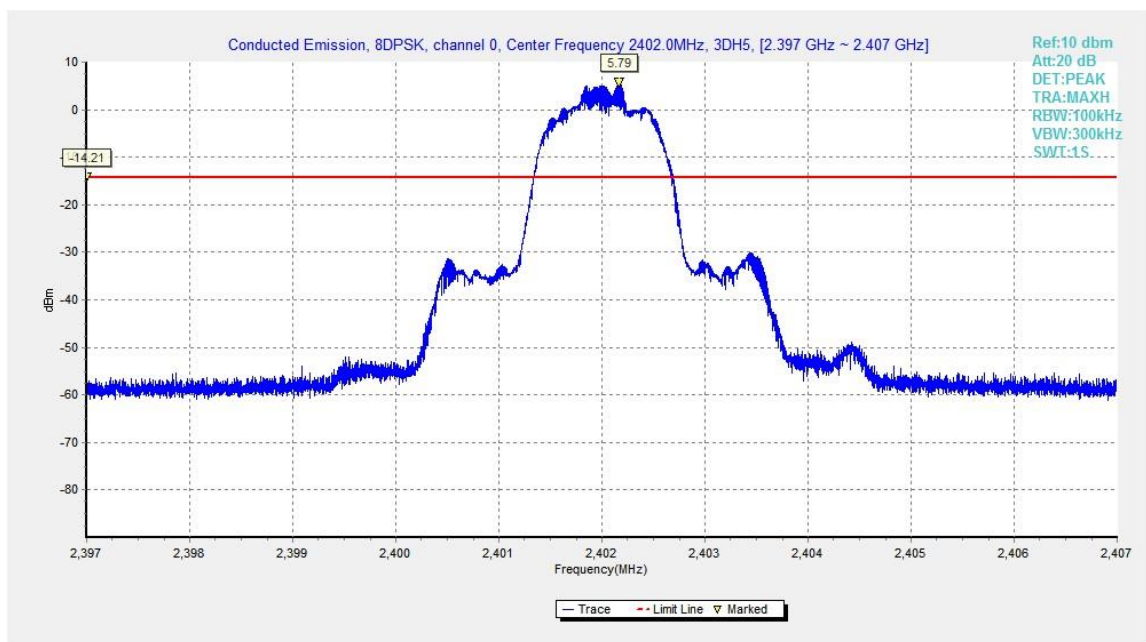
**Fig.46. Conducted spurious emission:  $\pi/4$  DQPSK, Channel 78, 1GHz - 3GHz**



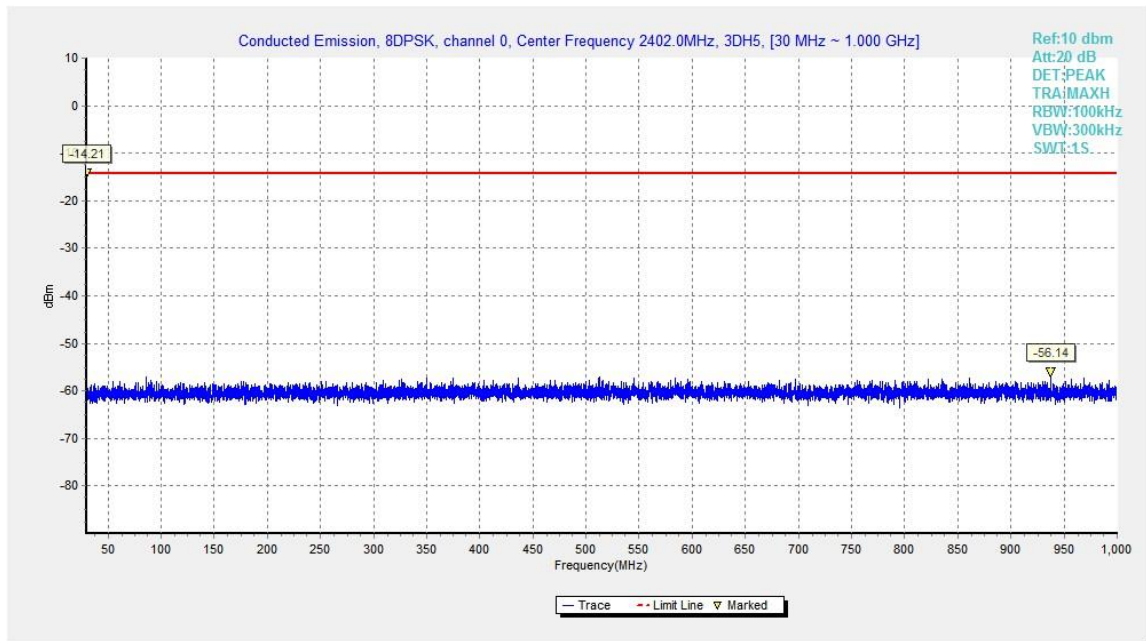
**Fig.47. Conducted spurious emission:  $\pi/4$  DQPSK, Channel 78, 3GHz - 10GHz**



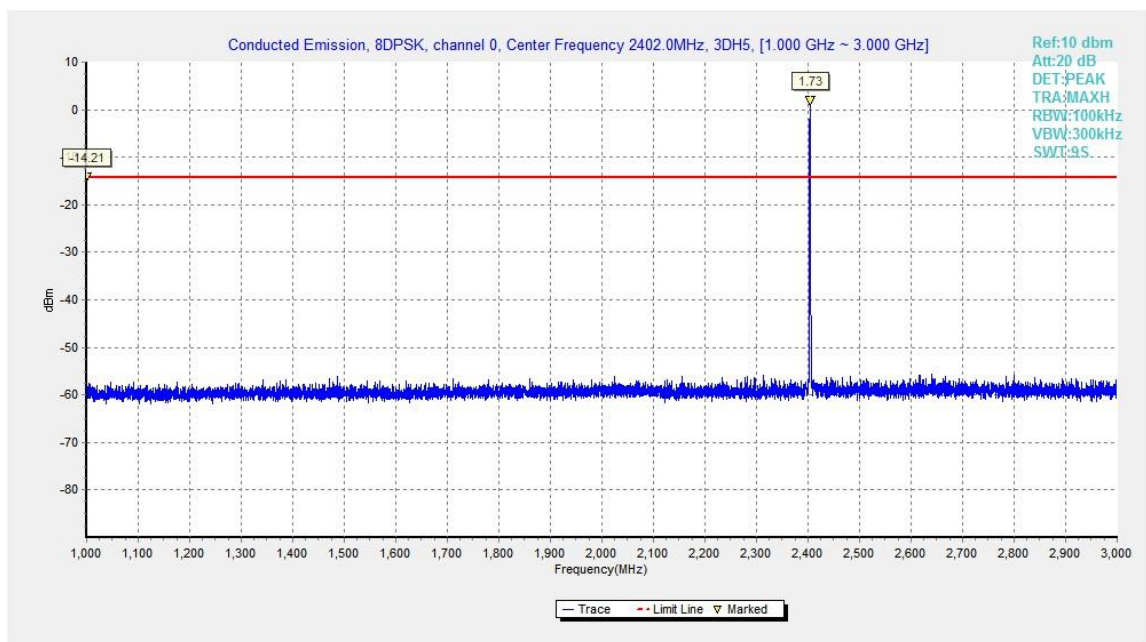
**Fig.48. Conducted spurious emission:  $\pi/4$  DQPSK, Channel 78, 10GHz - 26GHz**



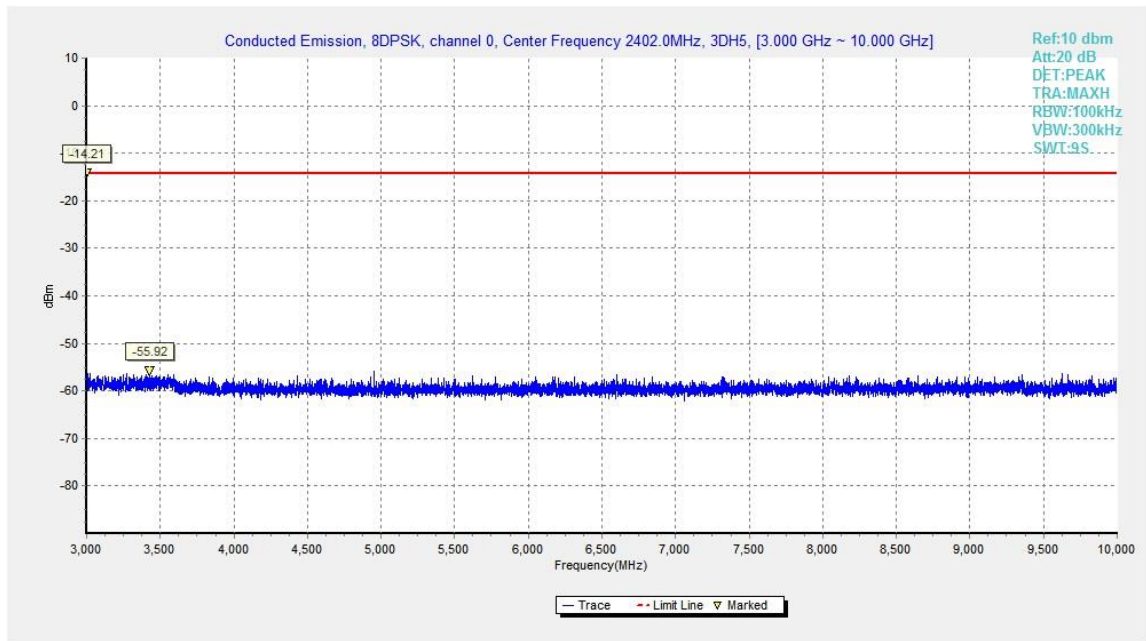
**Fig.49. Conducted spurious emission: 8DPSK, Channel 0,2402MHz**



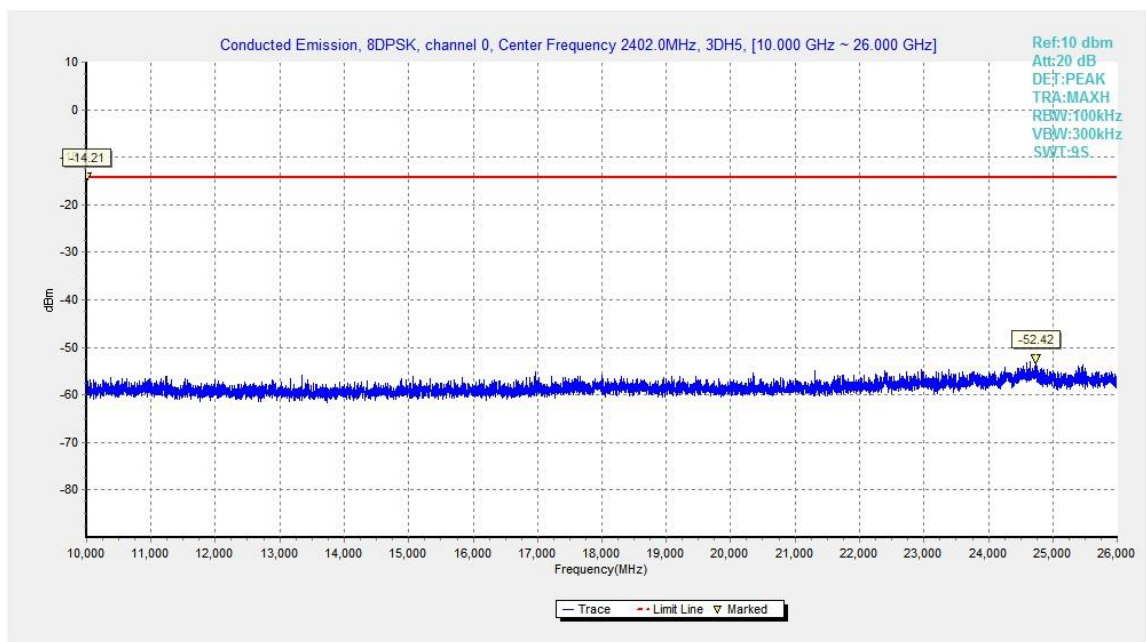
**Fig.50. Conducted spurious emission: 8DPSK, Channel 0, 30MHz - 1GHz**



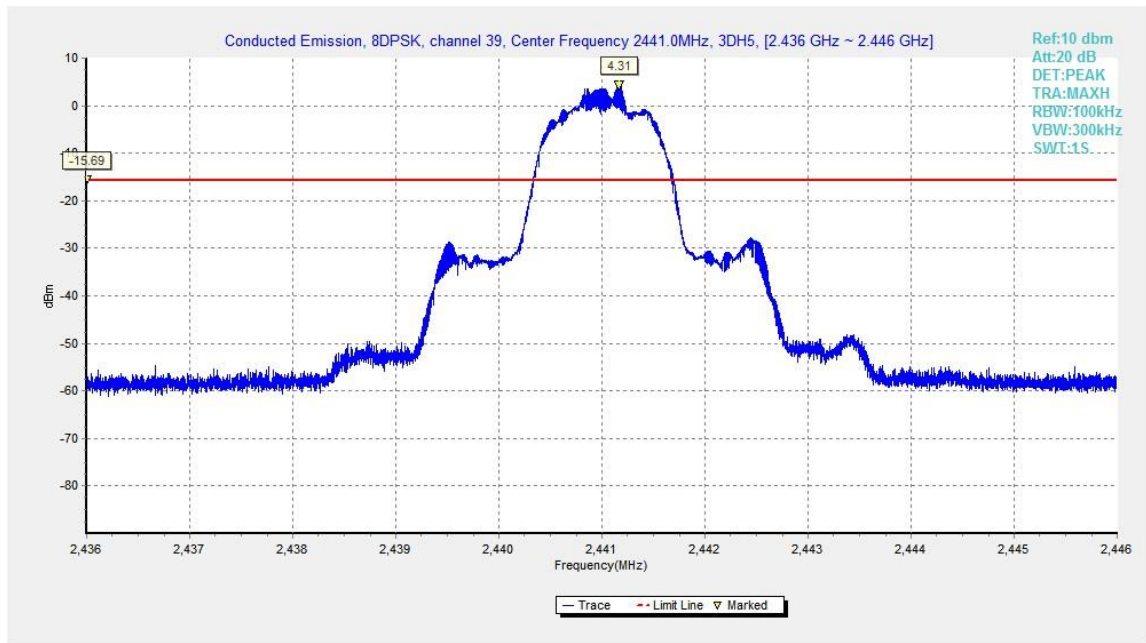
**Fig.51. Conducted spurious emission: 8DPSK, Channel 0, 1GHz - 3GHz**



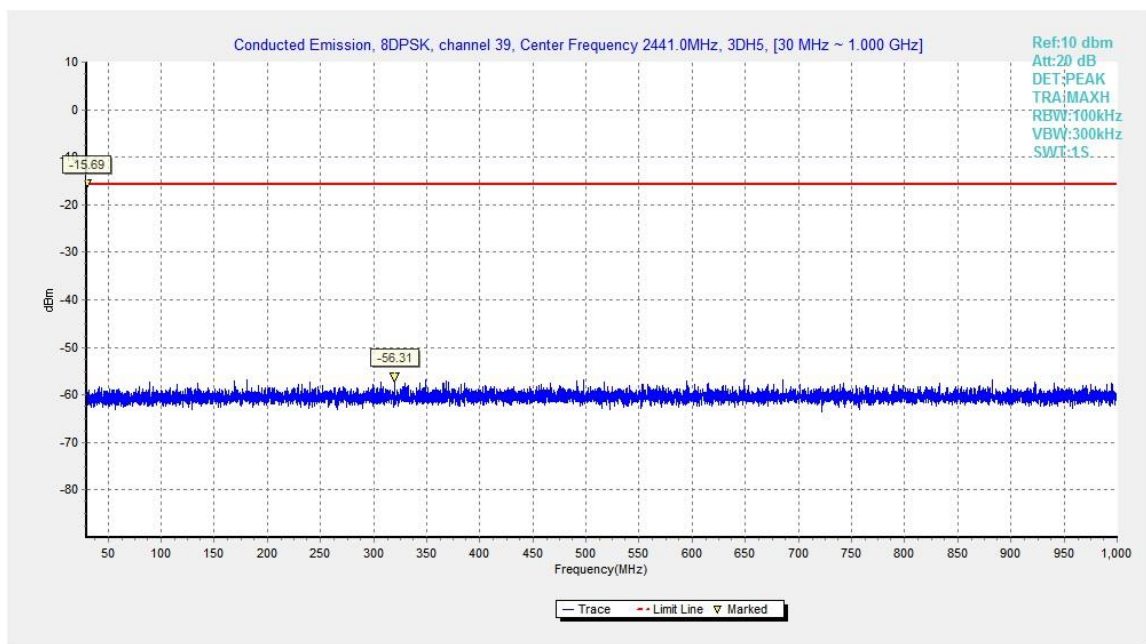
**Fig.52. Conducted spurious emission: 8DPSK, Channel 0, 3GHz - 10GHz**



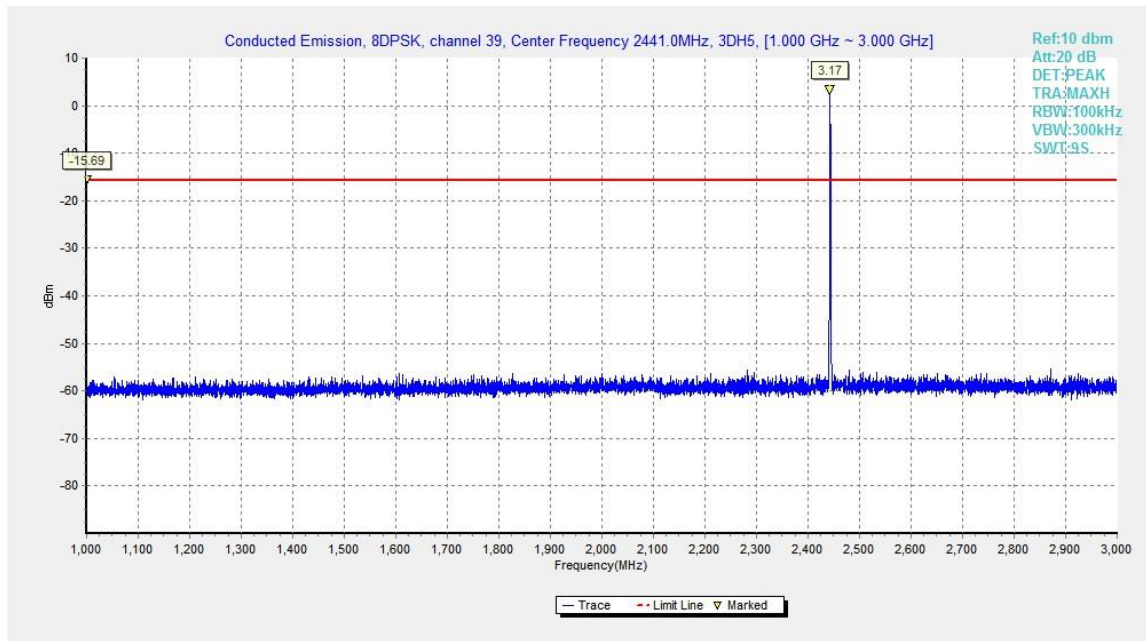
**Fig.53. Conducted spurious emission: 8DPSK, Channel 0,10GHz - 26GHz**



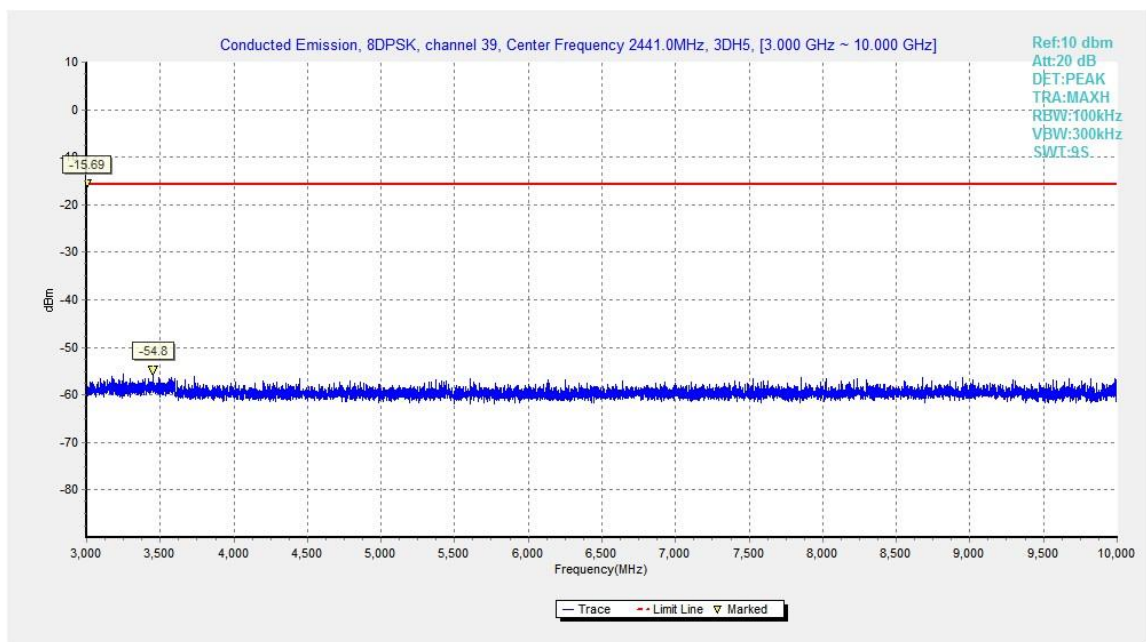
**Fig.54. Conducted spurious emission: 8DPSK, Channel 39, 2441MHz**



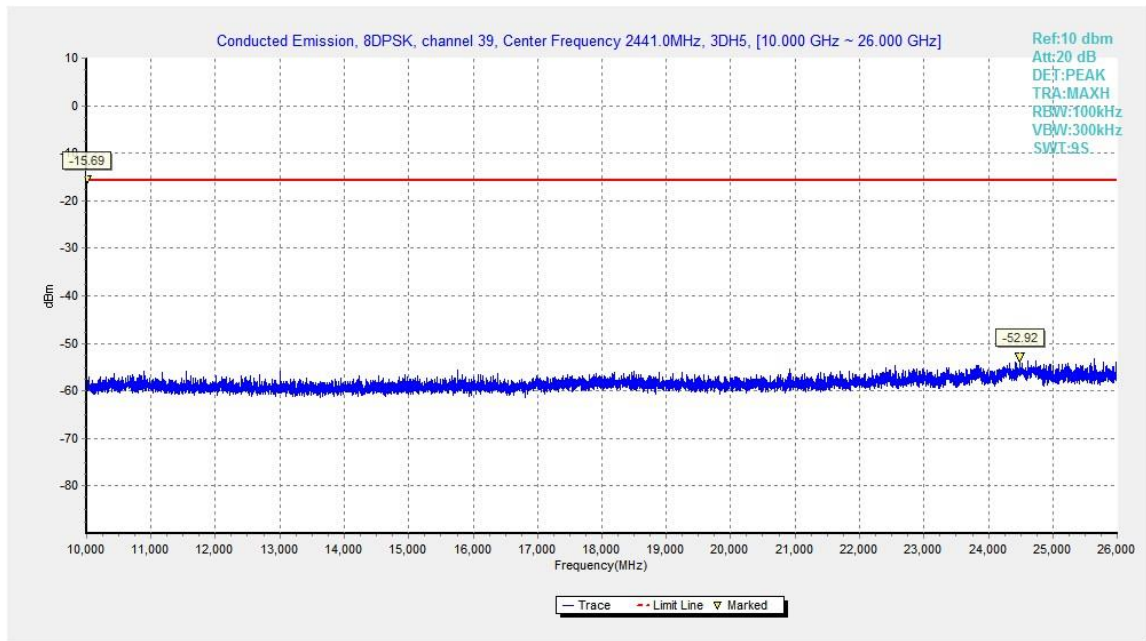
**Fig.55. Conducted spurious emission: 8DPSK, Channel 39, 30MHz - 1GHz**



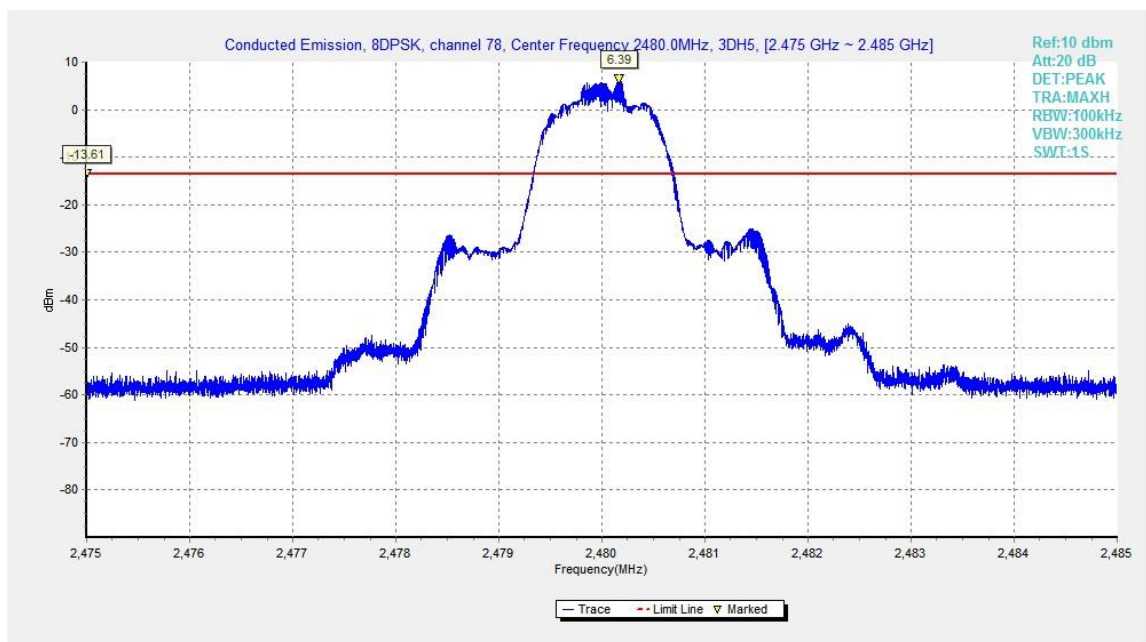
**Fig.56. Conducted spurious emission: 8DPSK, Channel 39, 1GHz - 3GHz**



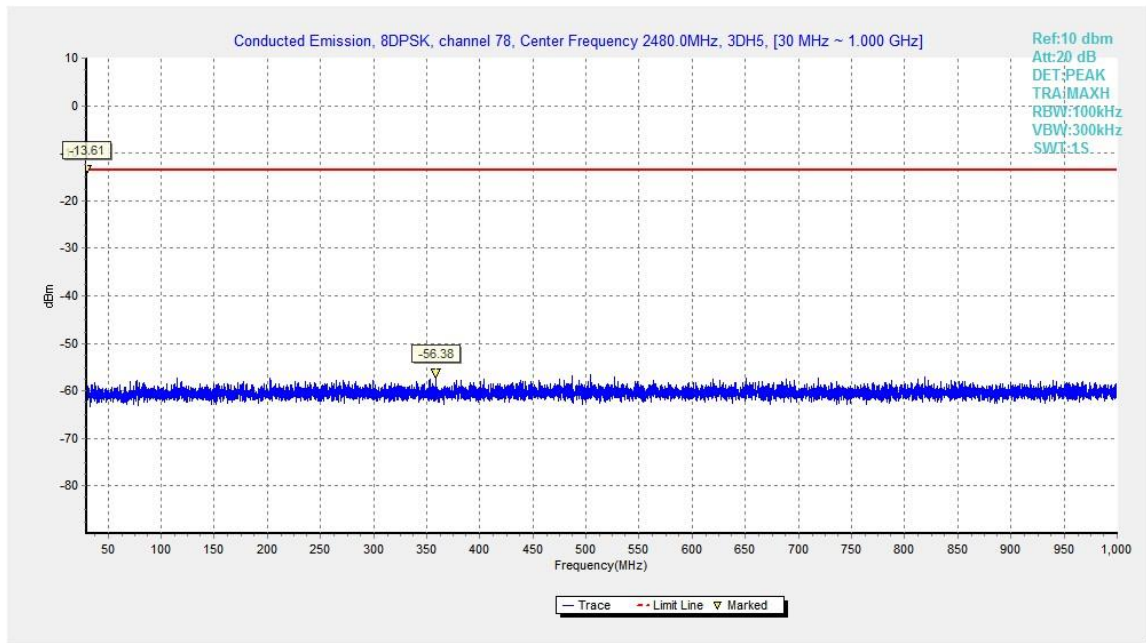
**Fig.57. Conducted spurious emission: 8DPSK, Channel 39, 3GHz - 10GHz**



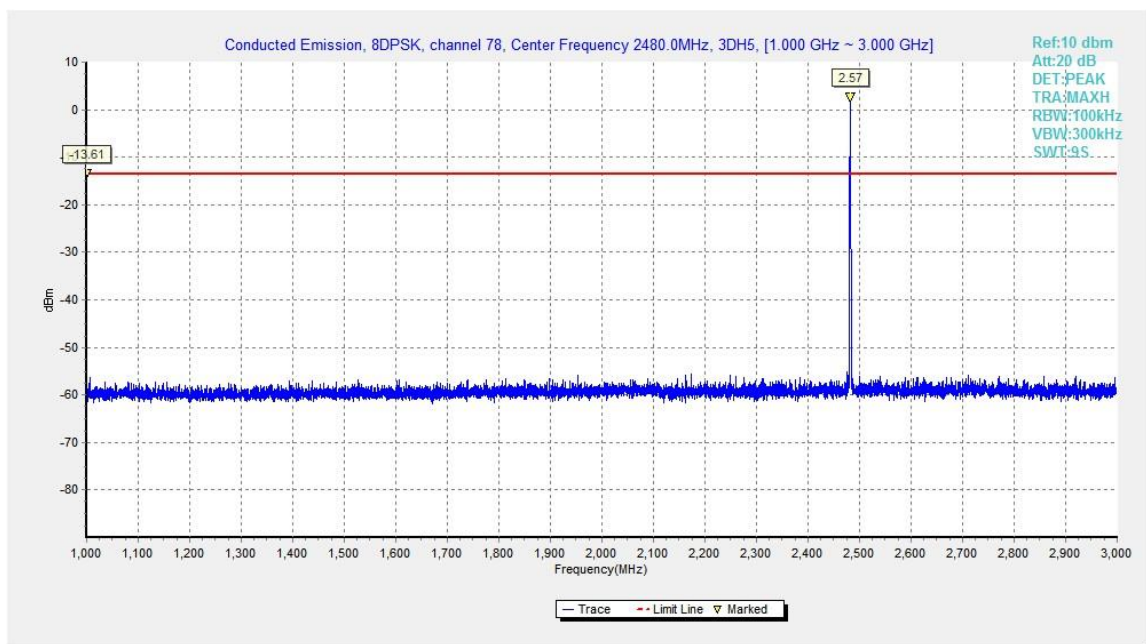
**Fig.58. Conducted spurious emission: 8DPSK, Channel 39, 10GHz – 26GHz**



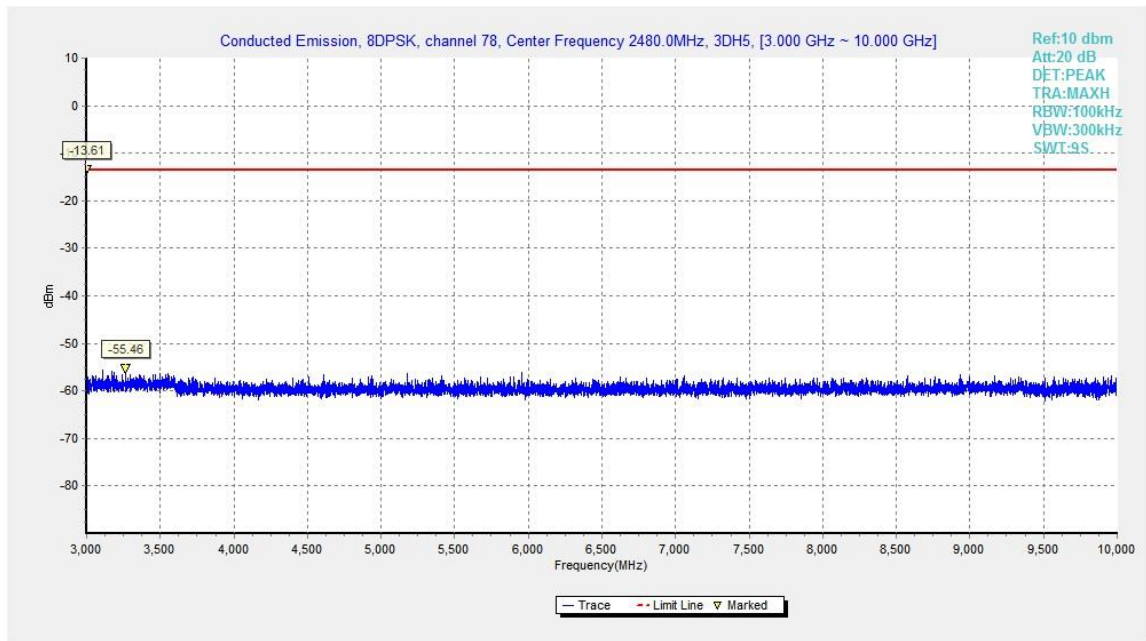
**Fig.59. Conducted spurious emission: 8DPSK, Channel 78, 2480MHz**



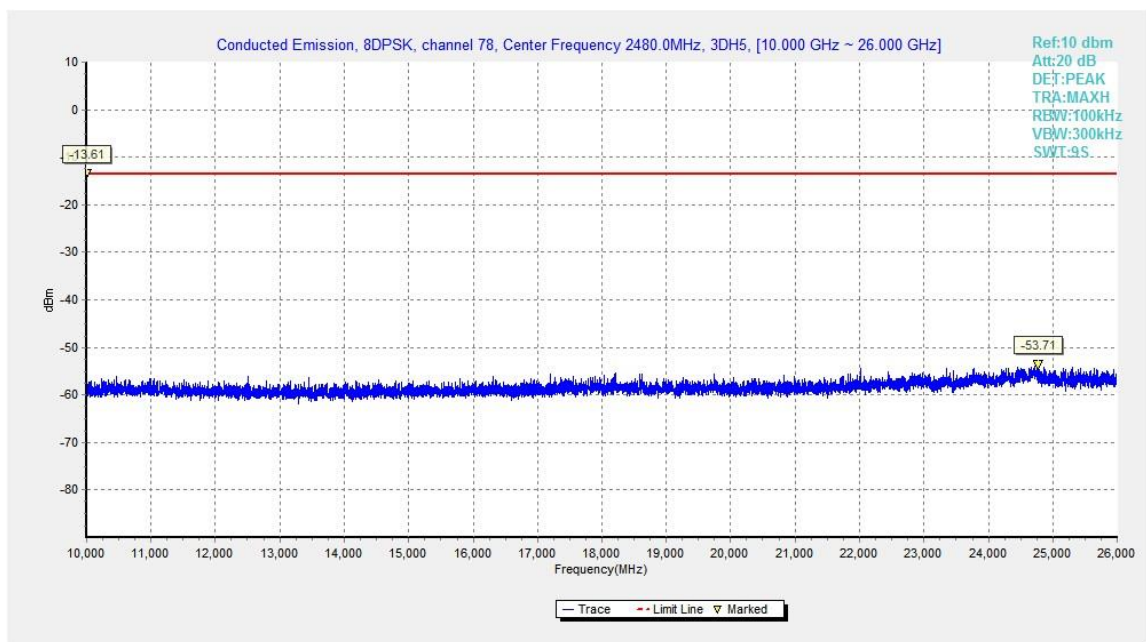
**Fig.60. Conducted spurious emission: 8DPSK, Channel 78, 30MHz - 1GHz**



**Fig.61. Conducted spurious emission: 8DPSK, Channel 78, 1GHz - 3GHz**



**Fig.62. Conducted spurious emission: 8DPSK, Channel 78, 3GHz - 10GHz**



**Fig.63. Conducted spurious emission: 8DPSK, Channel 78, 10GHz - 26GHz**

## A.6. Transmitter Spurious Emission - Radiated

**Method of Measurement:** See ANSI C63.10-2013-clause 6.4 & 6.5 & 6.6

**Measurement Limit:**

| Standard                               | Limit                        |
|----------------------------------------|------------------------------|
| FCC 47 CFR Part 15.247, 15.205, 15.209 | 20dB below peak output power |

radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

**Limit in restricted band:**

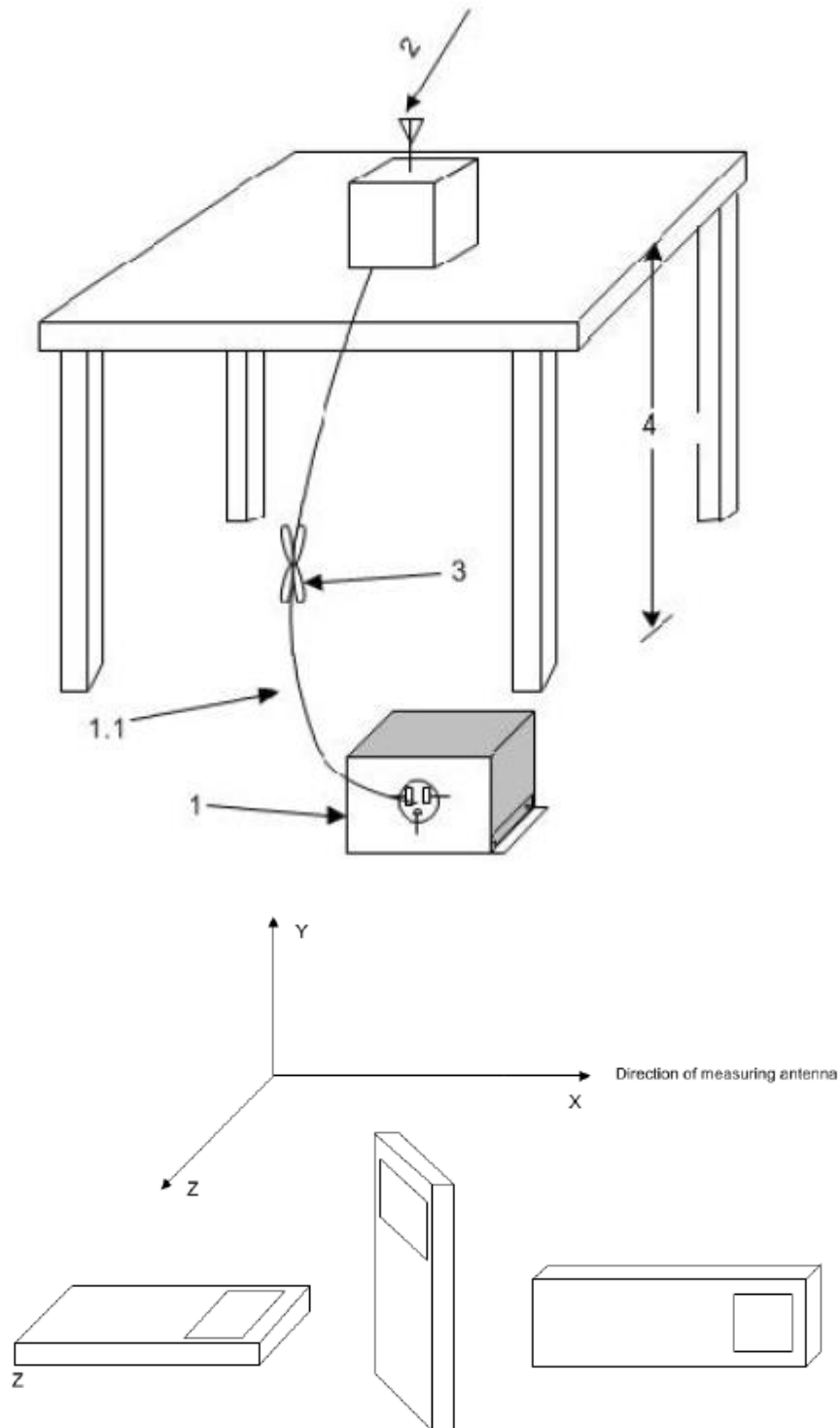
| Frequency (MHz) | Field strength( $\mu\text{V}/\text{m}$ ) | Measurement distance (m) |
|-----------------|------------------------------------------|--------------------------|
| 0.009 - 0.490   | 2400/F(kHz)                              | 300                      |
| 0.490 - 1.705   | 24000/F(kHz)                             | 30                       |
| 1.705 – 30.0    | 30                                       | 30                       |

| Frequency of emission (MHz) | Field strength( $\mu\text{V}/\text{m}$ ) | Field strength(dBuV/m) |
|-----------------------------|------------------------------------------|------------------------|
| 30-88                       | 100                                      | 40                     |
| 88-216                      | 150                                      | 43.5                   |
| 216-960                     | 200                                      | 46                     |
| Above 960                   | 500                                      | 54                     |

**Set up:**

Tabletop devices shall be placed on a nonconducting platform with nominal top surface dimensions 1 m by 1.5 m. For emissions testing at or below 1 GHz, the table height shall be 80 cm above the reference ground plane. For emission measurements above 1 GHz, the table height shall be 1.5 m

The EUT and transmitting antenna shall be centered on the turntable.



### Test Condition

The EUT shall be tested 1 near top, 1 near middle, and 1 near bottom. Set the unlicensed wireless device to operate in continuous transmit mode. For unlicensed wireless devices unable to be configured for 100% duty cycle even in test mode, configure the system for the maximum duty cycle supported.

When required for unlicensed wireless devices, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the

nominal rated supply voltage.

#### **Exploratory radiated emissions measurements**

Exploratory radiated measurements shall be performed at the measurement distance or at a closer distance than that specified for compliance to determine the emission characteristics of the EUT and, if applicable, the EUT configuration that produces the maximum level of emissions. The frequencies of maximum emission may be determined by manually positioning the antenna close to the EUT, and then moving the antenna over all sides of the EUT while observing a spectral display. It is advantageous to have prior knowledge of the frequencies of emissions, although this may be determined from such a near-field scan. The near-field scan shall only be used to determine the frequency but not the amplitude of the emissions. Where exploratory measurements are not adequate to determine the worst-case operating modes and are used only to identify the frequencies of the highest emissions, additional preliminary tests can be required.

For emissions from the EUT, the maximum level shall be determined by rotating the EUT and its antenna through  $0^{\circ}$  to  $360^{\circ}$ . For each mode of operation required to be tested, the frequency spectrum (based on findings from exploratory measurements) shall be monitored.

Broadband antennas and a spectrum analyzer or a radio-noise meter with a panoramic display are often useful in this type of test. If either antenna height or EUT azimuth are not fully measured during exploratory testing, then complete testing can be required at the OATS or semi-anechoic chamber when the final full spectrum testing is performed.

#### **Final radiated emissions measurements**

The final measurements are using the orientation and equipment arrangement of the EUT based on the measurement results found during the preliminary (exploratory) measurements, the EUT arrangement, appropriate modulation, and modes of operation that produce the emissions that have the highest amplitude relative to the limit shall be selected for the final measurement.

For each mode of operation required to be tested, the frequency spectrum (based on findings from exploratory measurements) shall be monitored. The highest signal levels relative to the limit shall be determined by rotating the EUT from  $0^{\circ}$  to  $360^{\circ}$  and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations.

For each mode selected, record the frequency and amplitude of the highest fundamental emission (if applicable), as well as the frequency and amplitude of the six highest spurious emissions relative to the limit. Emissions more than 20 dB below the limit do not need to be reported.

This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

#### **The receiver references:**

| Frequency of emission (MHz) | RBW/VBW       | Sweep Time(s) |
|-----------------------------|---------------|---------------|
| 30-1000                     | 100KHz/300KHz | 5             |
| 1000-4000                   | 1MHz/1MHz     | 15            |
| 4000-18000                  | 1MHz/1MHz     | 40            |
| 18000-26500                 | 1MHz/1MHz     | 20            |

$P_{Mea}$  is the field strength recorded from the instrument.

The measurement results are obtained as described below:

Result=  $P_{Mea}$  + Cable Loss + Antenna Factor

Where:

$P_{Mea}$  field strength recorded from the instrument

### Peak Measurement results

#### GFSK Ch 0

| Frequency (MHz) | Result (dBuV/m) | Cable Loss (dB) | Antenna Factor | PMea (dBuV/m) | Polarization | Limit (dBuV/m) | Margin (dBuV/m) |
|-----------------|-----------------|-----------------|----------------|---------------|--------------|----------------|-----------------|
| 17995           | 58.3            | -25.5           | 46.7           | 37.1          | V            | 74             | 15.7            |
| 17962.5         | 57.8            | -25.5           | 46.7           | 36.6          | V            | 74             | 16.2            |
| 17990           | 57.7            | -25.5           | 46.7           | 36.5          | V            | 74             | 16.3            |
| 17988.5         | 57.5            | -25.5           | 46.7           | 36.3          | V            | 74             | 16.5            |
| 17993           | 57.5            | -25.5           | 46.7           | 36.3          | V            | 74             | 16.5            |
| 2375.8          | 55.8            | -14.3           | 28             | 42.1          | V            | 74             | 18.2            |

#### GFSK Ch 39

| Frequency (MHz) | Result (dBuV/m) | Cable Loss (dB) | Antenna Factor | PMea (dBuV/m) | Polarization | Limit (dBuV/m) | Margin (dBuV/m) |
|-----------------|-----------------|-----------------|----------------|---------------|--------------|----------------|-----------------|
| 17964.5         | 57.9            | -25.5           | 46.7           | 36.7          | V            | 74             | 16.1            |
| 17499           | 57.8            | -26.9           | 45.2           | 39.4          | V            | 74             | 16.2            |
| 17916.5         | 57.8            | -25.5           | 46.7           | 36.6          | V            | 74             | 16.2            |
| 17957.5         | 57.7            | -25.5           | 46.7           | 36.5          | V            | 74             | 16.3            |
| 17969           | 57.7            | -25.5           | 46.7           | 36.5          | V            | 74             | 16.3            |
| 17985.5         | 57.7            | -25.5           | 46.7           | 36.5          | V            | 74             | 16.3            |

#### GFSK Ch 78

| Frequency (MHz) | Result (dBuV/m) | Cable Loss (dB) | Antenna Factor | PMea (dBuV/m) | Polarization | Limit (dBuV/m) | Margin (dBuV/m) |
|-----------------|-----------------|-----------------|----------------|---------------|--------------|----------------|-----------------|
| 17888           | 57.8            | -25.5           | 46.7           | 36.6          | V            | 74             | 16.2            |
| 17935           | 57.6            | -25.5           | 46.7           | 36.4          | V            | 74             | 16.4            |
| 17978.5         | 57.6            | -25.5           | 46.7           | 36.4          | V            | 74             | 16.4            |
| 17948.5         | 57.4            | -25.5           | 46.7           | 36.2          | V            | 74             | 16.6            |
| 17874           | 57.3            | -25.5           | 46.7           | 36.1          | V            | 74             | 16.7            |
| 2491.4          | 55.7            | -14.2           | 28.3           | 41.6          | H            | 74             | 18.3            |

**$\pi/4$  DQPSK Ch 0**

| Frequency (MHz) | Result (dBuV/m) | Cable Loss (dB) | Antenna Factor | PMea (dBuV/m) | Polarization | Limit (dBuV/m) | Margin (dBuV/m) |
|-----------------|-----------------|-----------------|----------------|---------------|--------------|----------------|-----------------|
| 17979.5         | 58              | -25.5           | 46.7           | 36.8          | V            | 74             | 16              |
| 17997           | 57.9            | -25.5           | 46.7           | 36.7          | V            | 74             | 16.1            |
| 17871.5         | 57.8            | -25.5           | 46.7           | 36.6          | V            | 74             | 16.2            |
| 17963.5         | 57.8            | -25.5           | 46.7           | 36.6          | V            | 74             | 16.2            |
| 17804.5         | 57.7            | -25.5           | 46.7           | 36.5          | V            | 74             | 16.3            |
| 2358.7          | 55.9            | -14.3           | 28             | 42.2          | V            | 74             | 18.1            |

**$\pi/4$  DQPSK Ch 39**

| Frequency (MHz) | Result (dBuV/m) | Cable Loss (dB) | Antenna Factor | PMea (dBuV/m) | Polarization | Limit (dBuV/m) | Margin (dBuV/m) |
|-----------------|-----------------|-----------------|----------------|---------------|--------------|----------------|-----------------|
| 17951           | 57.8            | -25.5           | 46.7           | 36.6          | V            | 74             | 16.2            |
| 17884.5         | 57.5            | -25.5           | 46.7           | 36.3          | V            | 74             | 16.5            |
| 17947           | 57.5            | -25.5           | 46.7           | 36.3          | V            | 74             | 16.5            |
| 17911.5         | 57.4            | -25.5           | 46.7           | 36.2          | V            | 74             | 16.6            |
| 17928.5         | 57.3            | -25.5           | 46.7           | 36.1          | V            | 74             | 16.7            |
| 17840           | 57.2            | -25.5           | 46.7           | 36            | V            | 74             | 16.8            |

**$\pi/4$  DQPSK Ch 78**

| Frequency (MHz) | Result (dBuV/m) | Cable Loss (dB) | Antenna Factor | PMea (dBuV/m) | Polarization | Limit (dBuV/m) | Margin (dBuV/m) |
|-----------------|-----------------|-----------------|----------------|---------------|--------------|----------------|-----------------|
| 17948.5         | 58.4            | -25.5           | 46.7           | 37.2          | V            | 74             | 15.6            |
| 17914.5         | 57.9            | -25.5           | 46.7           | 36.7          | V            | 74             | 16.1            |
| 17969.5         | 57.7            | -25.5           | 46.7           | 36.5          | V            | 74             | 16.3            |
| 17984           | 57.6            | -25.5           | 46.7           | 36.4          | V            | 74             | 16.4            |
| 17991.5         | 57.6            | -25.5           | 46.7           | 36.4          | V            | 74             | 16.4            |
| 2499.1          | 55.4            | -13.9           | 28.4           | 41            | V            | 74             | 18.6            |

**8DPSK Ch 0**

| Frequency (MHz) | Result (dBuV/m) | Cable Loss (dB) | Antenna Factor | PMea (dBuV/m) | Polarization | Limit (dBuV/m) | Margin (dBuV/m) |
|-----------------|-----------------|-----------------|----------------|---------------|--------------|----------------|-----------------|
| 17943           | 59.2            | -25.5           | 46.7           | 38            | V            | 74             | 14.8            |
| 17814           | 58.1            | -25.5           | 46.7           | 36.9          | V            | 74             | 15.9            |
| 17876           | 58              | -25.5           | 46.7           | 36.8          | V            | 74             | 16              |
| 17920           | 57.9            | -25.5           | 46.7           | 36.7          | V            | 74             | 16.1            |
| 17985.5         | 57.9            | -25.5           | 46.7           | 36.7          | V            | 74             | 16.1            |
| 2339.5          | 55.8            | -14.6           | 28             | 42.4          | H            | 74             | 18.2            |

**8DPSK Ch 39**

| Frequency (MHz) | Result (dBuV/m) | Cable Loss (dB) | Antenna Factor | PMea (dBuV/m) | Polarization | Limit (dBuV/m) | Margin (dBuV/m) |
|-----------------|-----------------|-----------------|----------------|---------------|--------------|----------------|-----------------|
| 17856           | 57.9            | -25.5           | 46.7           | 36.7          | V            | 74             | 16.1            |
| 17951           | 57.7            | -25.5           | 46.7           | 36.5          | V            | 74             | 16.3            |
| 17972.5         | 57.7            | -25.5           | 46.7           | 36.5          | V            | 74             | 16.3            |
| 17985.5         | 57.7            | -25.5           | 46.7           | 36.5          | V            | 74             | 16.3            |
| 17942.5         | 57.6            | -25.5           | 46.7           | 36.4          | V            | 74             | 16.4            |
| 17962           | 57.6            | -25.5           | 46.7           | 36.4          | V            | 74             | 16.4            |

**8DPSK Ch 78**

| Frequency (MHz) | Result (dBuV/m) | Cable Loss (dB) | Antenna Factor | PMea (dBuV/m) | Polarization | Limit (dBuV/m) | Margin (dBuV/m) |
|-----------------|-----------------|-----------------|----------------|---------------|--------------|----------------|-----------------|
| 17981           | 58.3            | -25.5           | 46.7           | 37.1          | V            | 74             | 15.7            |
| 17993.5         | 58.1            | -25.5           | 46.7           | 36.9          | V            | 74             | 15.9            |
| 17971           | 57.7            | -25.5           | 46.7           | 36.5          | V            | 74             | 16.3            |
| 17871.5         | 57.6            | -25.5           | 46.7           | 36.4          | V            | 74             | 16.4            |
| 17982           | 57.6            | -25.5           | 46.7           | 36.4          | V            | 74             | 16.4            |
| 2490.1          | 55.6            | -14.2           | 28.3           | 41.5          | H            | 74             | 18.4            |

**Average Measurement results**

**GFSK Ch 0**

| Frequency (MHz) | Result (dBuV/m) | Cable Loss (dB) | Antenna Factor | PMea (dBuV/m) | Polarization | Limit (dBuV/m) | Margin (dBuV/m) |
|-----------------|-----------------|-----------------|----------------|---------------|--------------|----------------|-----------------|
| 17953.5         | 46.9            | -25.5           | 46.7           | 25.7          | V            | 54             | 7.1             |
| 17962           | 46.9            | -25.5           | 46.7           | 25.7          | V            | 54             | 7.1             |
| 17980.5         | 46.9            | -25.5           | 46.7           | 25.7          | V            | 54             | 7.1             |
| 17967           | 46.8            | -25.5           | 46.7           | 25.6          | V            | 54             | 7.2             |
| 17948           | 46.7            | -25.5           | 46.7           | 25.5          | V            | 54             | 7.3             |
| 2378.5          | 42.5            | -14.2           | 28.1           | 28.6          | H            | 54             | 11.5            |

**GFSK Ch 39**

| Frequency (MHz) | Result (dBuV/m) | Cable Loss (dB) | Antenna Factor | PMea (dBuV/m) | Polarization | Limit (dBuV/m) | Margin (dBuV/m) |
|-----------------|-----------------|-----------------|----------------|---------------|--------------|----------------|-----------------|
| 17985.5         | 47.1            | -25.5           | 46.7           | 25.9          | V            | 54             | 6.9             |
| 17984           | 47              | -25.5           | 46.7           | 25.8          | V            | 54             | 7               |
| 17981.5         | 46.9            | -25.5           | 46.7           | 25.7          | V            | 54             | 7.1             |
| 17953.5         | 46.8            | -25.5           | 46.7           | 25.6          | V            | 54             | 7.2             |
| 17936.5         | 46.7            | -25.5           | 46.7           | 25.5          | V            | 54             | 7.3             |
| 17941           | 46.7            | -25.5           | 46.7           | 25.5          | V            | 54             | 7.3             |

**GFSK Ch 78**

| Frequency (MHz) | Result (dBuV/m) | Cable Loss (dB) | Antenna Factor | PMea (dBuV/m) | Polarization | Limit (dBuV/m) | Margin (dBuV/m) |
|-----------------|-----------------|-----------------|----------------|---------------|--------------|----------------|-----------------|
| 17980           | 46.8            | -25.5           | 46.7           | 25.6          | V            | 54             | 7.2             |
| 17964.5         | 46.7            | -25.5           | 46.7           | 25.5          | V            | 54             | 7.3             |
| 17978.5         | 46.7            | -25.5           | 46.7           | 25.5          | V            | 54             | 7.3             |
| 17979           | 46.7            | -25.5           | 46.7           | 25.5          | V            | 54             | 7.3             |
| 17994.5         | 46.7            | -25.5           | 46.7           | 25.5          | V            | 54             | 7.3             |
| 2485.3          | 42.5            | -14.2           | 28.3           | 28.4          | H            | 54             | 11.5            |

**$\pi/4$  DQPSK Ch 0**

| Frequency (MHz) | Result (dBuV/m) | Cable Loss (dB) | Antenna Factor | PMea (dBuV/m) | Polarization | Limit (dBuV/m) | Margin (dBuV/m) |
|-----------------|-----------------|-----------------|----------------|---------------|--------------|----------------|-----------------|
| 17979.5         | 47              | -25.5           | 46.7           | 25.8          | V            | 54             | 7               |
| 17997           | 46.8            | -25.5           | 46.7           | 25.6          | V            | 54             | 7.2             |
| 17964           | 46.7            | -25.5           | 46.7           | 25.5          | V            | 54             | 7.3             |
| 17967           | 46.7            | -25.5           | 46.7           | 25.5          | V            | 54             | 7.3             |
| 17987           | 46.7            | -25.5           | 46.7           | 25.5          | V            | 54             | 7.3             |
| 2385.6          | 42.4            | -14.2           | 28.1           | 28.5          | V            | 54             | 11.6            |

**$\pi/4$  DQPSK Ch 39**

| Frequency (MHz) | Result (dBuV/m) | Cable Loss (dB) | Antenna Factor | PMea (dBuV/m) | Polarization | Limit (dBuV/m) | Margin (dBuV/m) |
|-----------------|-----------------|-----------------|----------------|---------------|--------------|----------------|-----------------|
| 17978           | 46.9            | -25.5           | 46.7           | 25.7          | V            | 54             | 7.1             |
| 17986           | 46.8            | -25.5           | 46.7           | 25.6          | V            | 54             | 7.2             |
| 17961           | 46.7            | -25.5           | 46.7           | 25.5          | V            | 54             | 7.3             |
| 17972.5         | 46.7            | -25.5           | 46.7           | 25.5          | V            | 54             | 7.3             |
| 17993           | 46.7            | -25.5           | 46.7           | 25.5          | V            | 54             | 7.3             |
| 17945           | 46.6            | -25.5           | 46.7           | 25.4          | V            | 54             | 7.4             |

**$\pi/4$  DQPSK Ch 78**

| Frequency (MHz) | Result (dBuV/m) | Cable Loss (dB) | Antenna Factor | PMea (dBuV/m) | Polarization | Limit (dBuV/m) | Margin (dBuV/m) |
|-----------------|-----------------|-----------------|----------------|---------------|--------------|----------------|-----------------|
| 17971           | 46.8            | -25.5           | 46.7           | 25.6          | V            | 54             | 7.2             |
| 17952.5         | 46.7            | -25.5           | 46.7           | 25.5          | V            | 54             | 7.3             |
| 17972.5         | 46.7            | -25.5           | 46.7           | 25.5          | V            | 54             | 7.3             |
| 17944.5         | 46.6            | -25.5           | 46.7           | 25.4          | V            | 54             | 7.4             |
| 17976           | 46.6            | -25.5           | 46.7           | 25.4          | V            | 54             | 7.4             |
| 2487.2          | 42.6            | -14.2           | 28.3           | 28.5          | V            | 54             | 11.4            |

**8DPSK Ch 0**

| Frequency (MHz) | Result (dBuV/m) | Cable Loss (dB) | Antenna Factor | PMea (dBuV/m) | Polarization | Limit (dBuV/m) | Margin (dBuV/m) |
|-----------------|-----------------|-----------------|----------------|---------------|--------------|----------------|-----------------|
| 17948.5         | 47.1            | -25.5           | 46.7           | 25.9          | V            | 54             | 6.9             |
| 17943           | 47              | -25.5           | 46.7           | 25.8          | V            | 54             | 7               |
| 17978.5         | 47              | -25.5           | 46.7           | 25.8          | V            | 54             | 7               |
| 17998.5         | 46.9            | -25.5           | 46.7           | 25.7          | V            | 54             | 7.1             |
| 17950           | 46.7            | -25.5           | 46.7           | 25.5          | V            | 54             | 7.3             |
| 2385.1          | 42.4            | -14.2           | 28.1           | 28.5          | V            | 54             | 11.6            |

**8DPSK Ch 39**

| Frequency (MHz) | Result (dBuV/m) | Cable Loss (dB) | Antenna Factor | PMea (dBuV/m) | Polarization | Limit (dBuV/m) | Margin (dBuV/m) |
|-----------------|-----------------|-----------------|----------------|---------------|--------------|----------------|-----------------|
| 17972           | 47              | -25.5           | 46.7           | 25.8          | V            | 54             | 7               |
| 17976           | 46.9            | -25.5           | 46.7           | 25.7          | V            | 54             | 7.1             |
| 17992.5         | 46.9            | -25.5           | 46.7           | 25.7          | V            | 54             | 7.1             |
| 17965           | 46.8            | -25.5           | 46.7           | 25.6          | V            | 54             | 7.2             |
| 17973.5         | 46.8            | -25.5           | 46.7           | 25.6          | V            | 54             | 7.2             |
| 17942           | 46.7            | -25.5           | 46.7           | 25.5          | V            | 54             | 7.3             |

**8DPSK Ch 78**

| Frequency (MHz) | Result (dBuV/m) | Cable Loss (dB) | Antenna Factor | PMea (dBuV/m) | Polarization | Limit (dBuV/m) | Margin (dBuV/m) |
|-----------------|-----------------|-----------------|----------------|---------------|--------------|----------------|-----------------|
| 17951.5         | 46.7            | -25.5           | 46.7           | 25.5          | V            | 54             | 7.3             |
| 17953           | 46.7            | -25.5           | 46.7           | 25.5          | V            | 54             | 7.3             |
| 17953.5         | 46.7            | -25.5           | 46.7           | 25.5          | V            | 54             | 7.3             |
| 17973.5         | 46.7            | -25.5           | 46.7           | 25.5          | V            | 54             | 7.3             |
| 17948.5         | 46.6            | -25.5           | 46.7           | 25.4          | V            | 54             | 7.4             |
| 2485.6          | 42.5            | -14.2           | 28.3           | 28.4          | V            | 54             | 11.5            |

**Conclusion: Pass**

## A.7. Time of Occupancy (Dwell Time)

**Method of Measurement:** See ANSI C63.10-clause 7.8.4

The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:

- Span = zero span, centered on a hopping channel
- RBW = 1 MHz
- VBW  $\geq$  RBW
- Sweep = as necessary to capture the entire dwell time per hopping channel
- Detector function = peak
- Trace = max hold

Measure a pulse time in time domain at middle frequency and then count the hopping number in 31.6s(which equals with 0.4 multiply 79) of middle frequency ,then multiply the pulse time and hopping number and record them.

**Measurement Limit:**

| Standard                           | Limit (ms) |
|------------------------------------|------------|
| FCC 47 CFR Part 15.247(a) (1)(iii) | < 400      |

**Measurement Result:**

**For GFSK**

| Channel | Packet | Pulse time (ms) |      | Number of Transmissions |     | Dwell Time (ms) | Conclusion |
|---------|--------|-----------------|------|-------------------------|-----|-----------------|------------|
| 39      | DH1    | Fig.64          | 0.38 | Fig.65                  | 320 | 121.6           | <b>P</b>   |
|         | DH3    | Fig.66          | 1.63 | Fig.67                  | 106 | 172.78          | <b>P</b>   |
|         | DH5    | Fig.68          | 2.88 | Fig.69                  | 79  | 227.52          | <b>P</b>   |

**For  $\pi/4$  DQPSK**

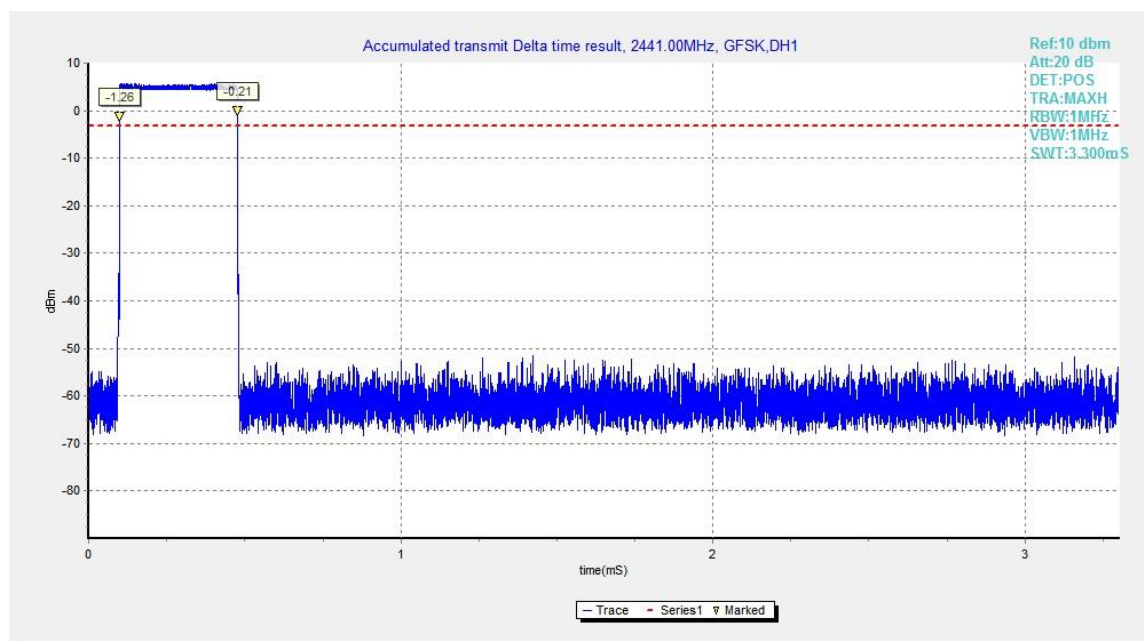
| Channel | Packet | Pulse time (ms) |      | Number of Transmissions |     | Dwell Time (ms) | Conclusion |
|---------|--------|-----------------|------|-------------------------|-----|-----------------|------------|
| 39      | 2DH1   | Fig.70          | 0.39 | Fig.71                  | 318 | 124.02          | <b>P</b>   |
|         | 2DH3   | Fig.72          | 1.64 | Fig.73                  | 121 | 198.44          | <b>P</b>   |
|         | 2DH5   | Fig.74          | 2.89 | Fig.75                  | 58  | 167.62          | <b>P</b>   |

For 8DPSK

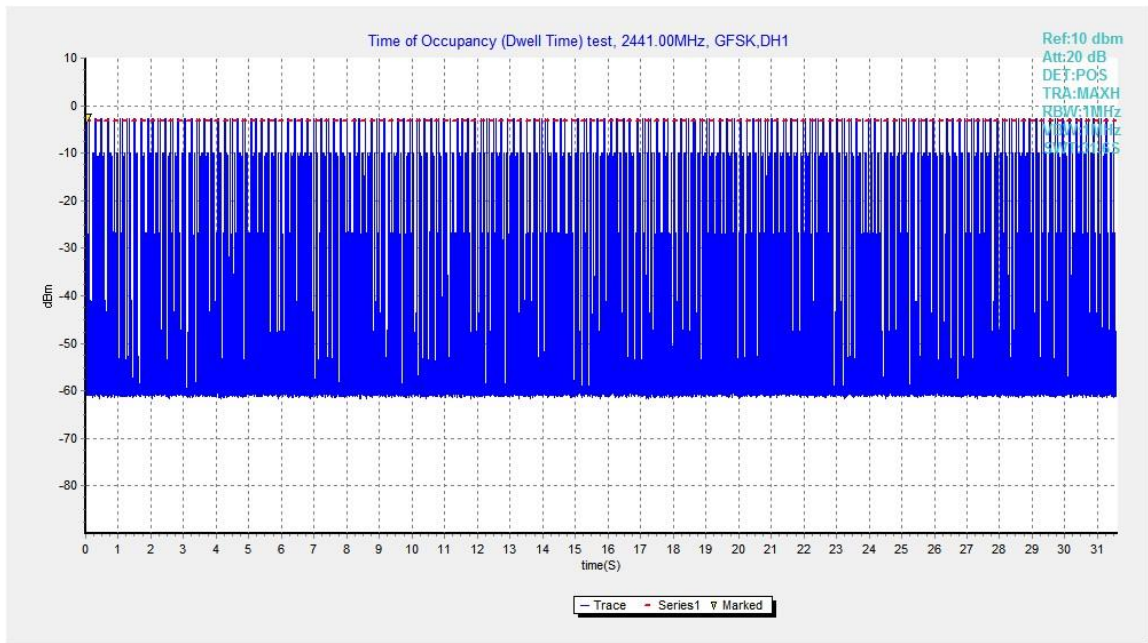
| Channel | Packet | Pulse time (ms) |      | Number of Transmissions |     | Dwell Time (ms) | Conclusion |
|---------|--------|-----------------|------|-------------------------|-----|-----------------|------------|
| 39      | 3DH1   | Fig.76          | 0.39 | Fig.77                  | 321 | 125.19          | P          |
|         | 3DH3   | Fig.78          | 1.64 | Fig.79                  | 105 | 172.2           | P          |
|         | 3DH5   | Fig.80          | 2.89 | Fig.81                  | 76  | 219.64          | P          |

**Conclusion: PASS**

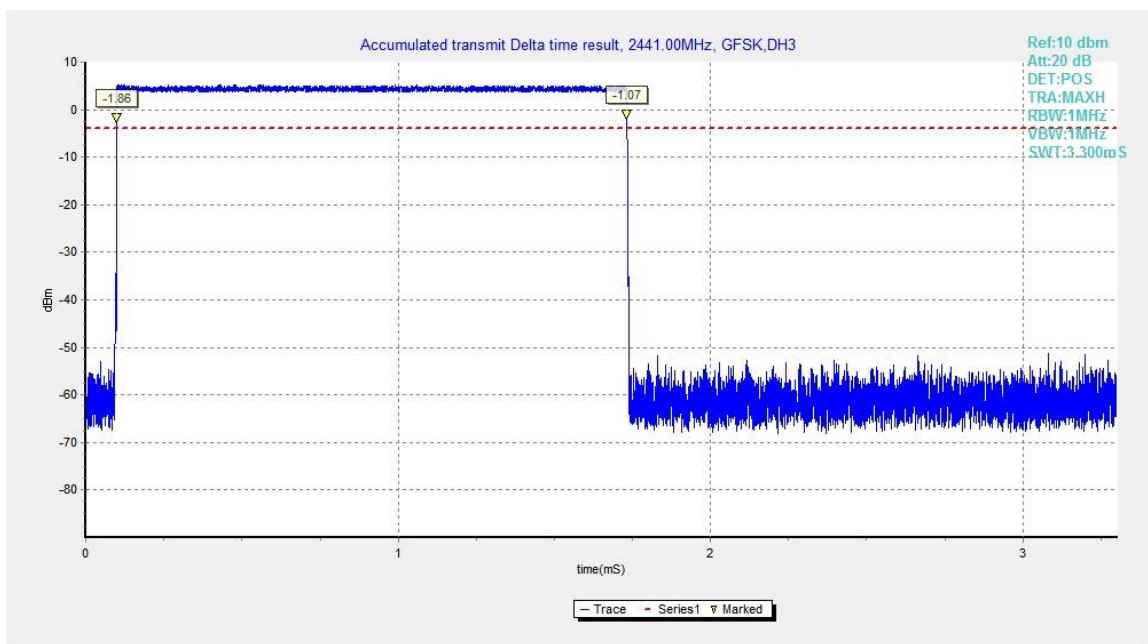
**Test graphs as below:**



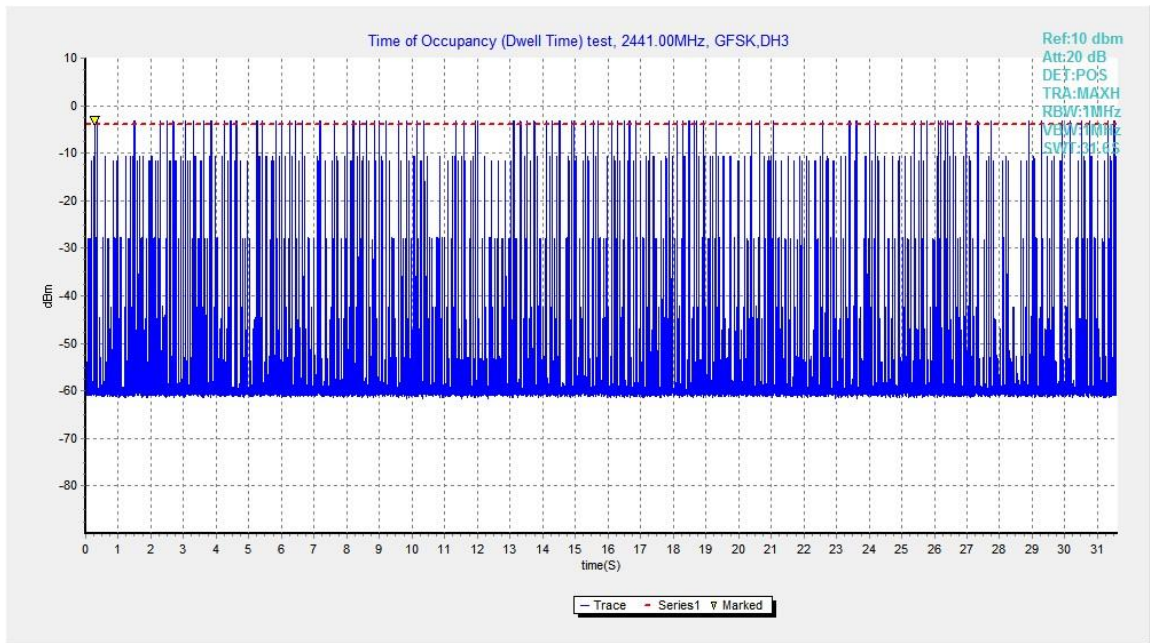
**Fig.64. Time of occupancy (Dwell Time): Channel 39, Packet DH1**



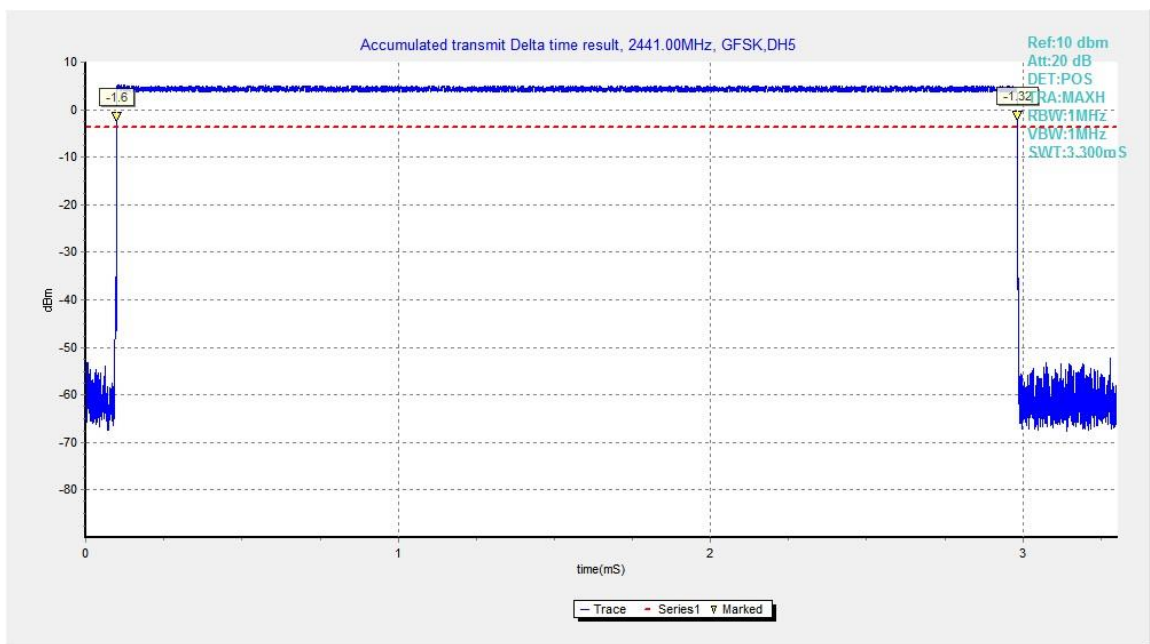
**Fig.65. Number of Transmissions Measurement: Channel 39, Packet DH1**



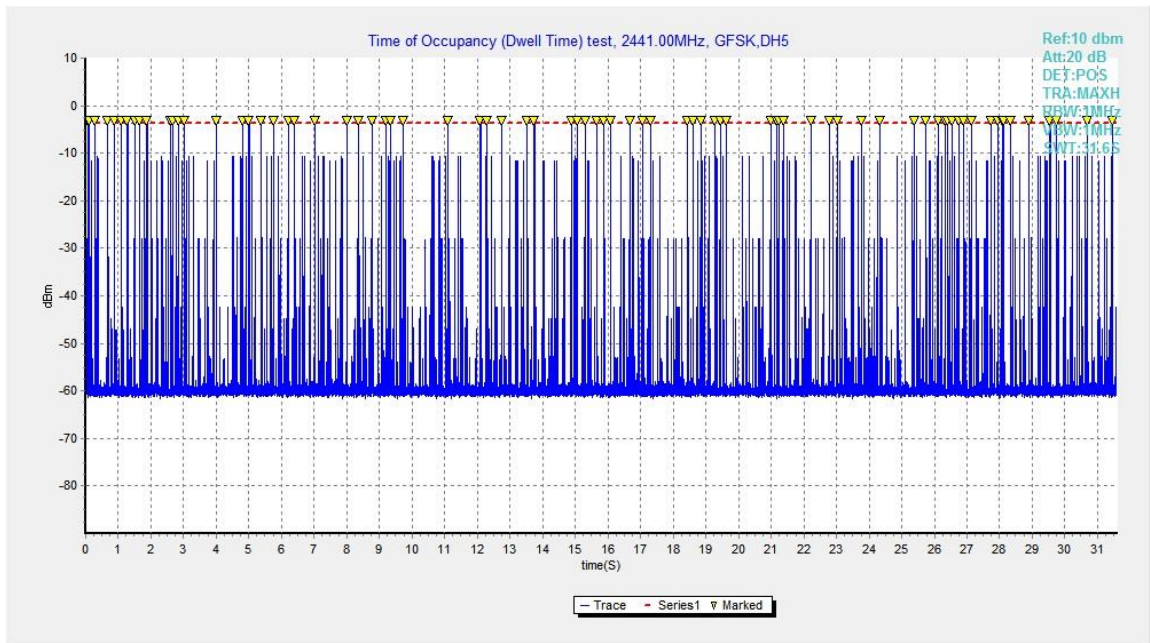
**Fig.66. Time of occupancy (Dwell Time): Channel 39, Packet DH3**



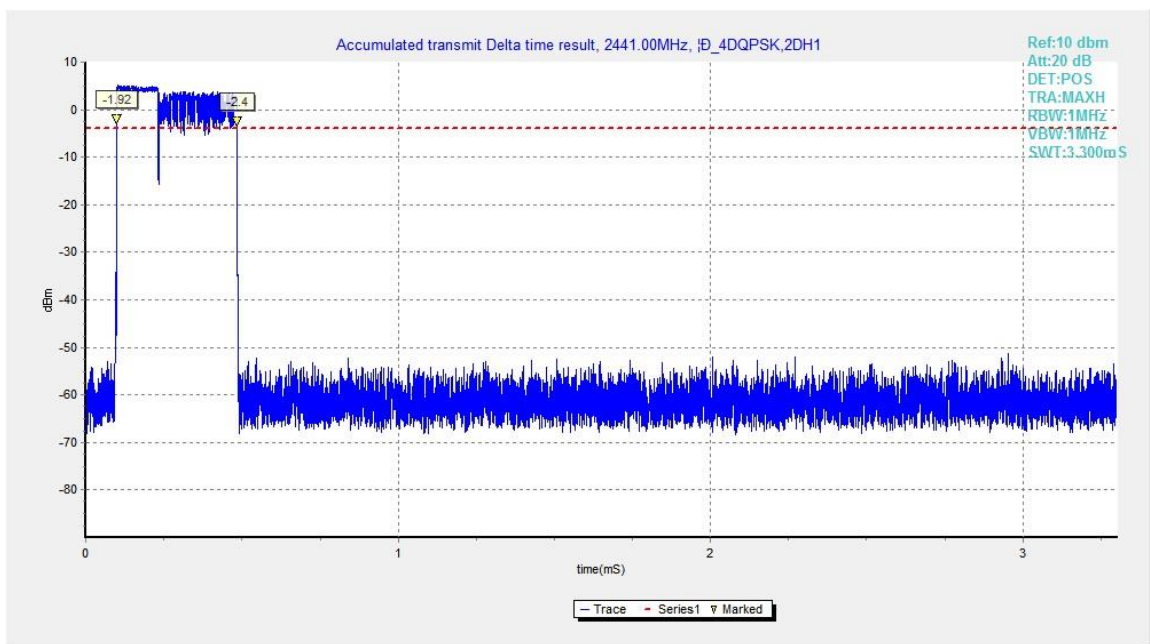
**Fig.67. Number of Transmissions Measurement: Channel 39,Packet DH3**



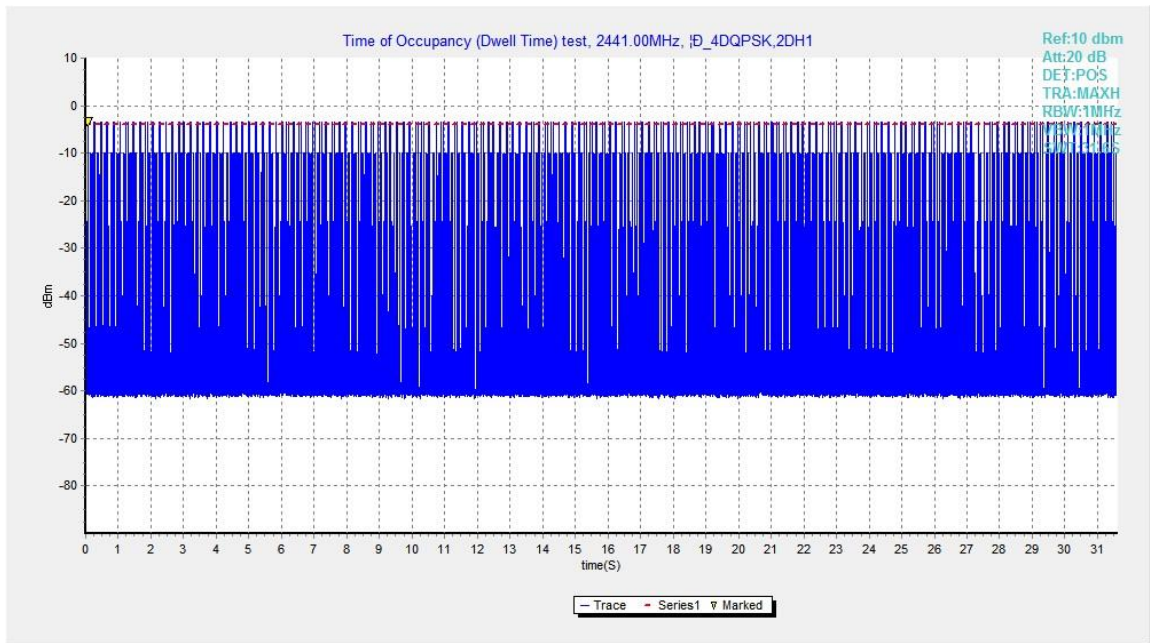
**Fig.68. Time of occupancy (Dwell Time): Channel 39, Packet DH5**



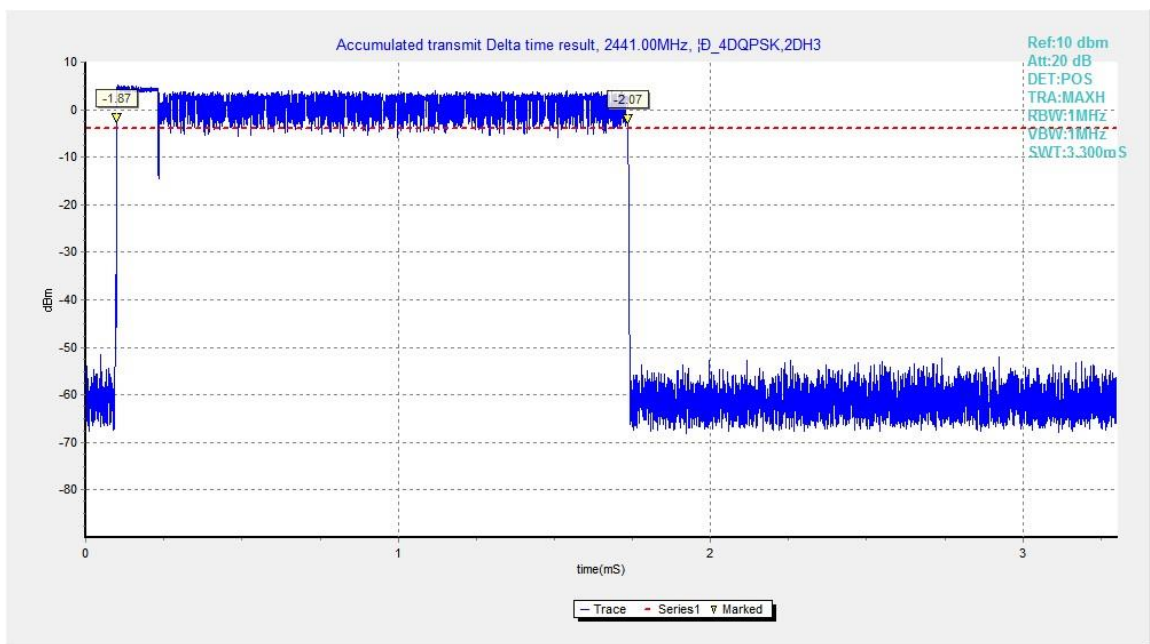
**Fig.69. Number of Transmissions Measurement: Channel 39,Packet DH5**



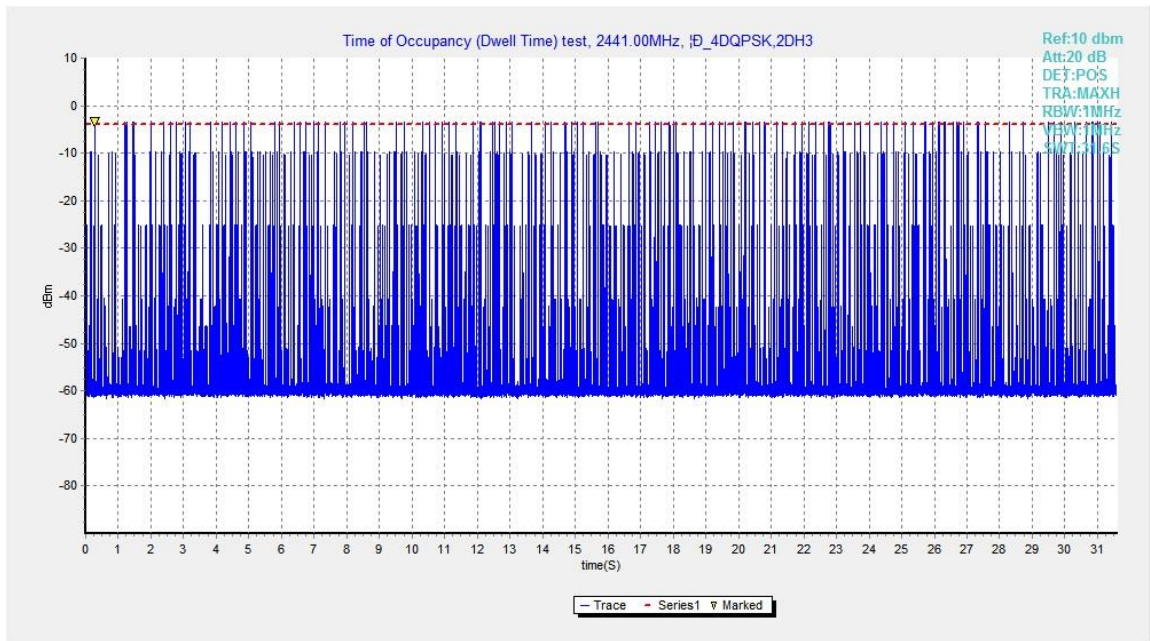
**Fig.70. Time of occupancy (Dwell Time): Channel 39, Packet 2-DH1**



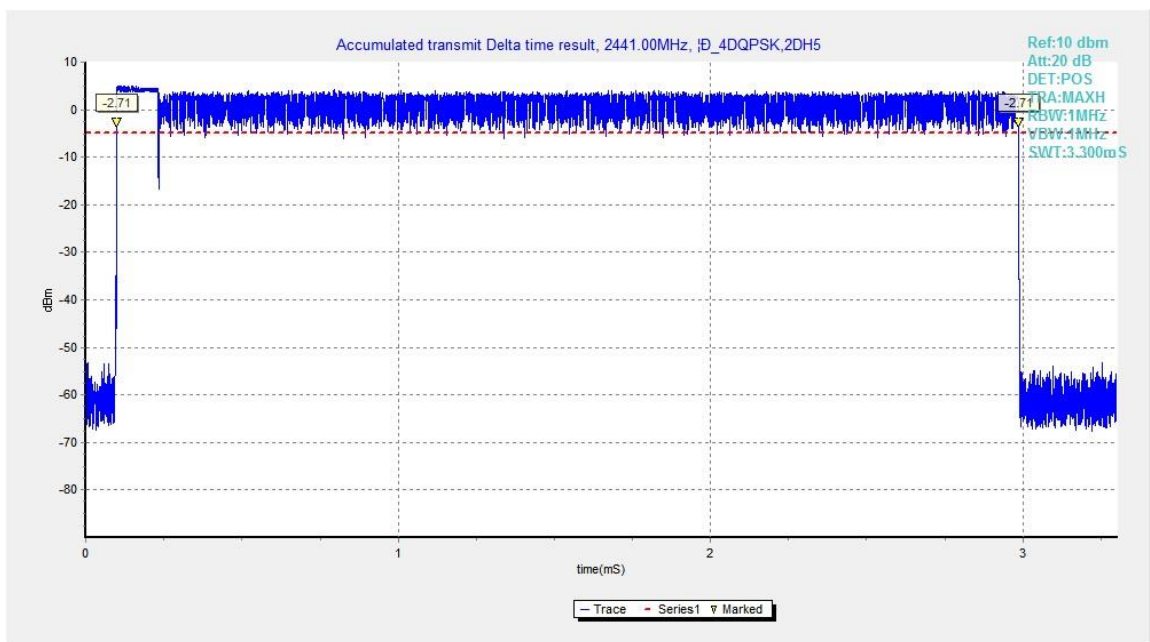
**Fig.71. Number of Transmissions Measurement: Channel 39,Packet 2-DH1**



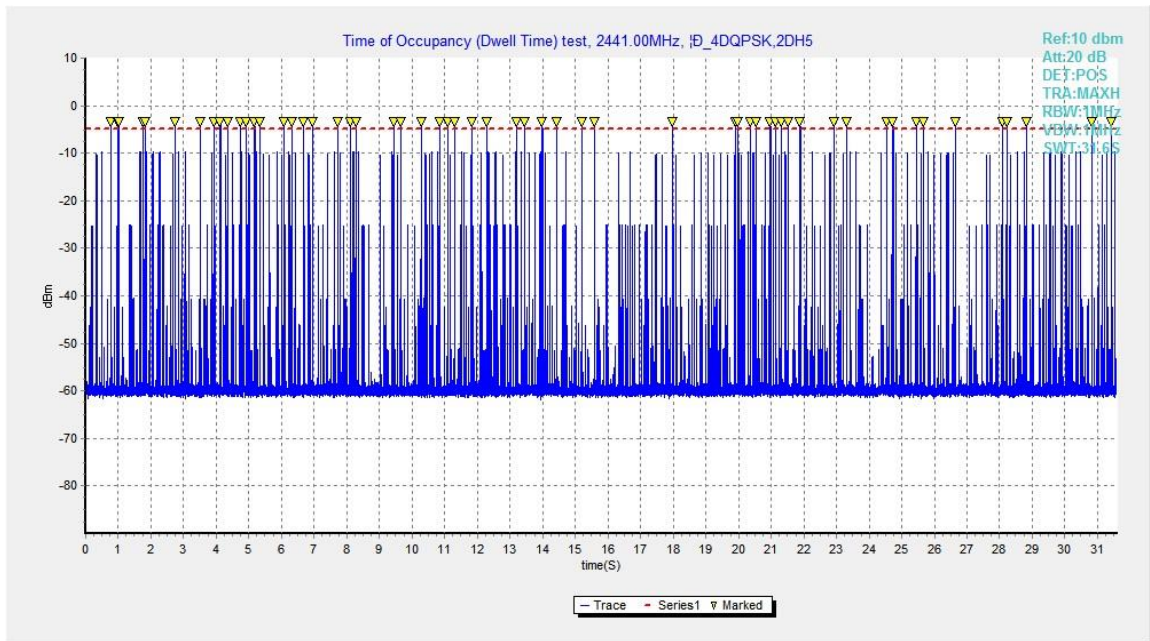
**Fig.72. Time of occupancy (Dwell Time): Channel 39, Packet 2-DH3**



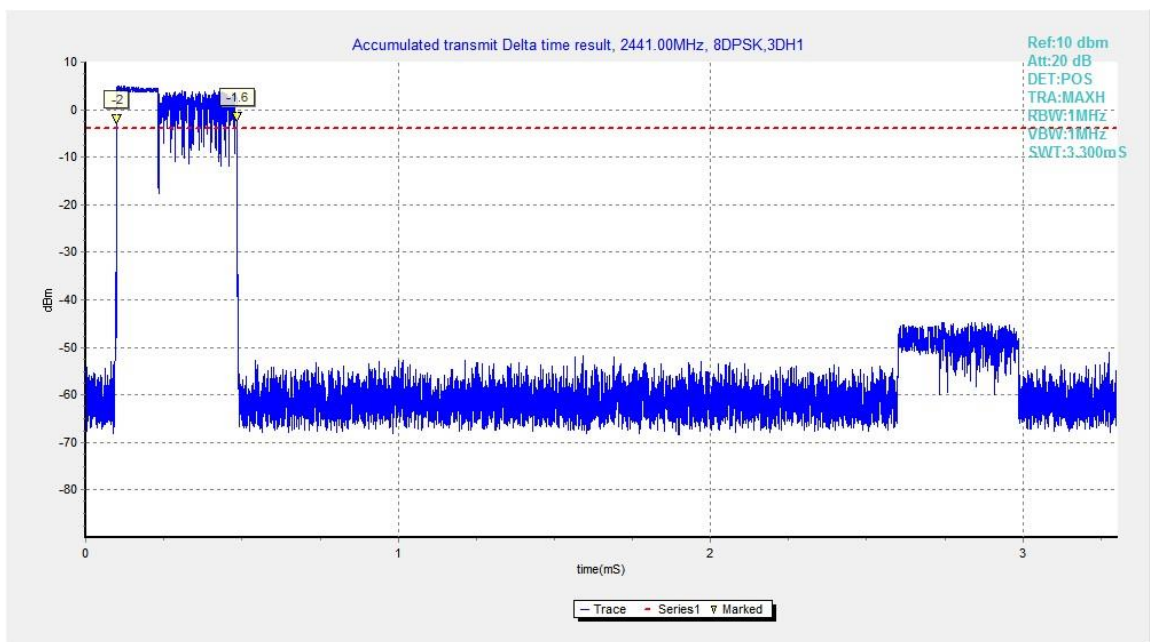
**Fig.73. Number of Transmissions Measurement: Channel 39,Packet 2-DH3**



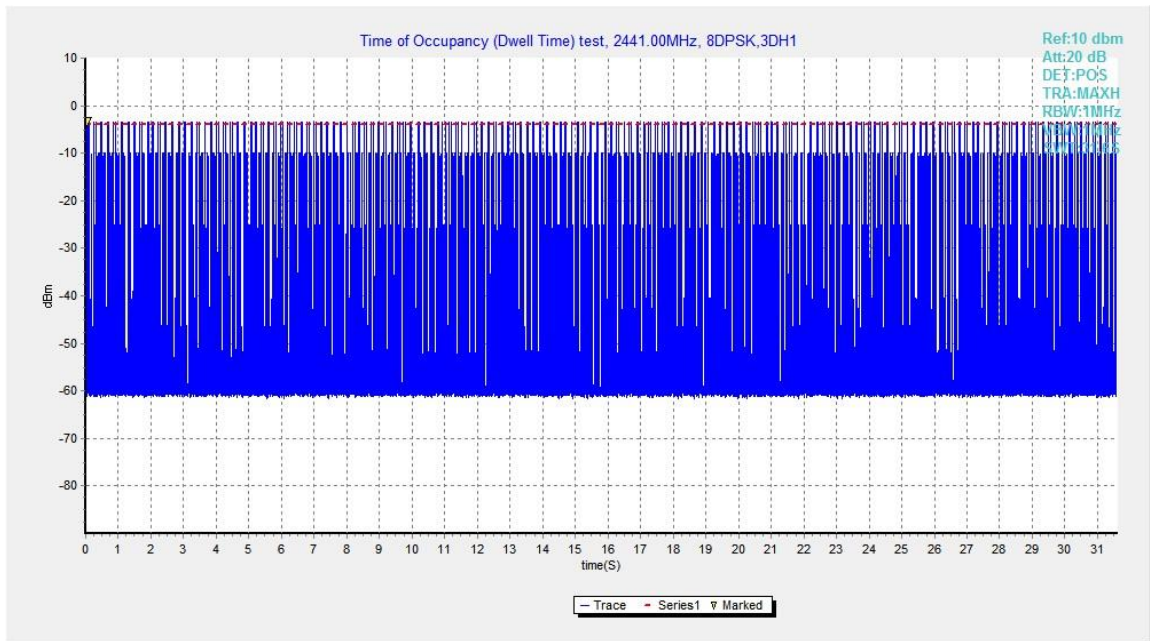
**Fig.74. Time of occupancy (Dwell Time): Channel 39, Packet 2-DH5**



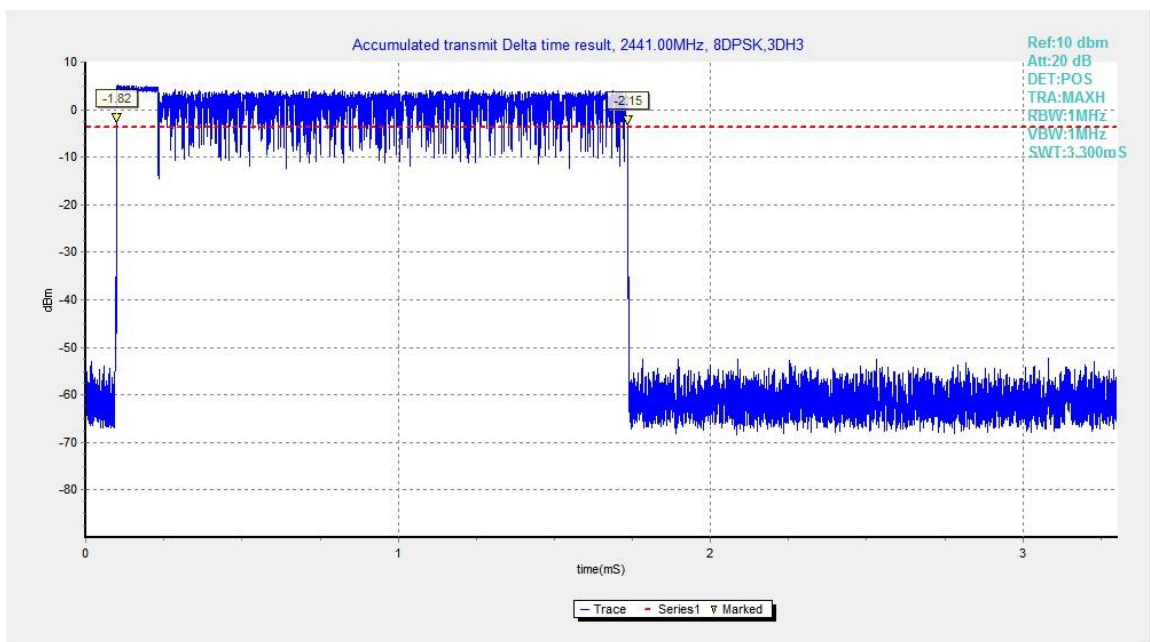
**Fig.75. Number of Transmissions Measurement: Channel 39,Packet 2-DH5**



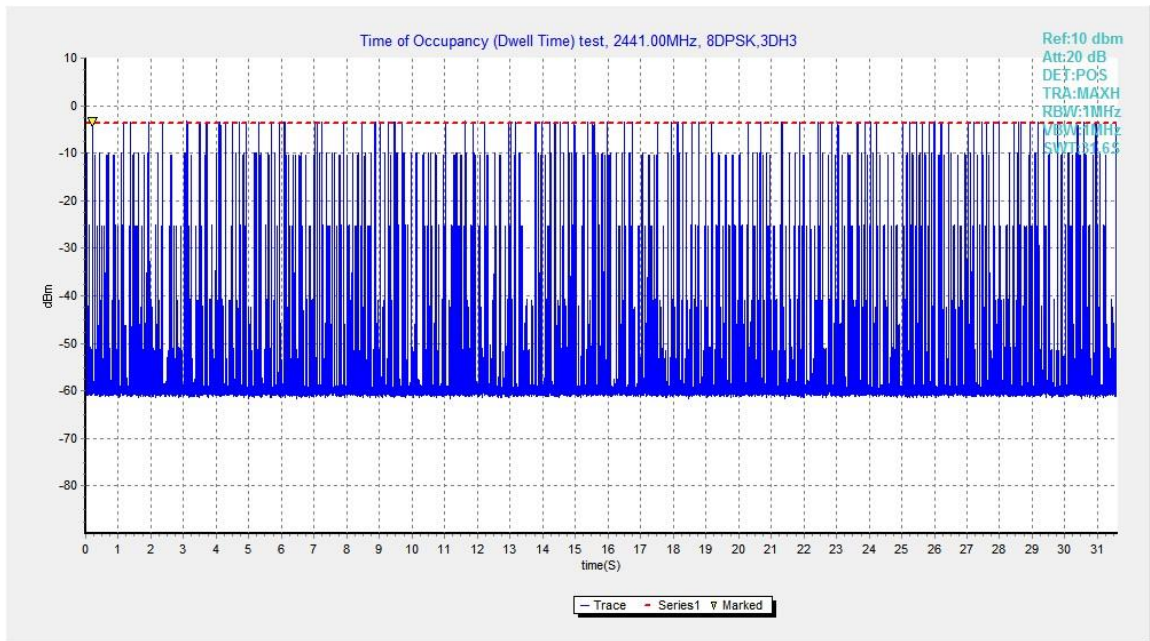
**Fig.76. Time of occupancy (Dwell Time): Channel 39, Packet 3-DH1**



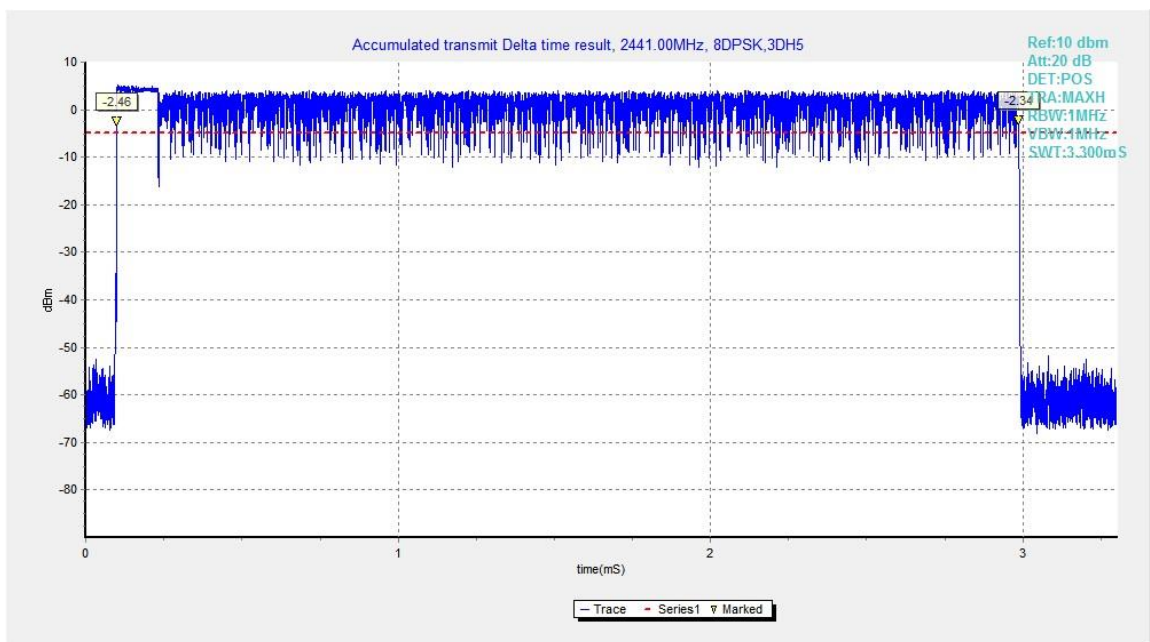
**Fig.77. Number of Transmissions Measurement: Channel 39,Packet 3-DH1**



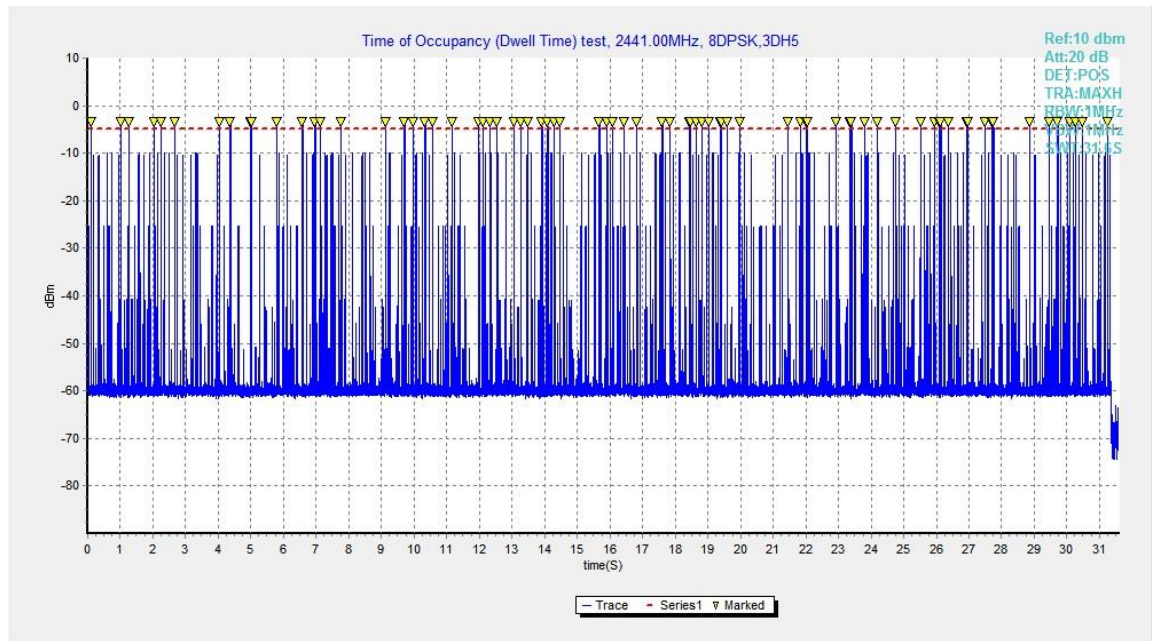
**Fig.78. Time of occupancy (Dwell Time): Channel 39, Packet 3-DH3**



**Fig.79. Number of Transmissions Measurement: Channel 39,Packet 3-DH3**



**Fig.80. Time of occupancy (Dwell Time): Channel 39, Packet 3-DH5**



**Fig.81. Number of Transmissions Measurement: Channel 39,Packet 3-DH5**